Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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Progress in the Accident Situation

WHILE one often hears that there has been a great increase in the number of electric railway accidents because of the increase in automobiles and the many reckless automobile drivers, there is cheer in the study of accidents in Chicago which appears elsewhere in this issue. There it is shown that while the number of accidents is increasing substantially, the number of accidents per 100 automobiles registered and per 100,000 street car-miles operated is showing a healthy decrease. In other words, the effort that is being expended so generally to prevent accidents is really bearing some fruit. Automobile drivers and motormen are evidently becoming more careful, or perhaps more experienced in anticipating trouble and thus avoiding it.

The great need in furthering this showing seems to be a better, more readily usable system of filing accident report data both by railway companies and by the courts, the enforcement of the laws to the limit against those few careless or reckless drivers for whose transgressions everyone must suffer, and vigorous steps to protect the interests of the general public in the use of the streets and highways. The record system for electric railways suggested by R. F. Kelker, Jr., in the article referred to, appears to be a very effective way of handling this detail and is worthy of special study. Anything that can be done to aid in visualizing the accident problems and in analyzing causes, should receive immediate consideration. The plan proposed not only does these things, but it involves practically no expense—which is an especial appeal in these times.

City Railways as Carload Freight Distributers

CITY railways have often been proposed as distributers of freight over the areas which they reach. But such propositions have usually included only l.c.l. or package freight, the railway taking the place of the present trucking concerns to a certain extent. Or, if carload freight was meant, it was assumed that the consignee would have to pay the local railway a switching and delivery charge in addition to the trunk-line charge.

That there are possibilities beyond this, which may be of real value to electric railways, is at least deducible from some decisions of the Interstate Commerce Commission affecting the Kansas City Railways. An article in this issue relates the history of a freight service development there and how the commission has finally granted to consignees on this particular branch of the Kansas City Railways the same freight rate that applies to the trunk-line delivery district. The significance of an extension of this policy, for which this case may be a satisfactory precedent, is very real. If consignees located at any point on the city railway are granted the same carload freight rates as those in the trunk-line switching district, the local railway would soon become an enlarged terminal railway for all carload freight distribution. From a civic standpoint, the development of business centers on land less expensive than that adjoining railroad sidings would be valuable. Congestion of freight traffic would be reduced and deliveries expedited. The local railway could make its track and power investment work during present lean hours.

While there are many other problems than the legal and rate problems to consider and solve before any such development may take place, yet the possible significance of this western precedent should be carefully studied. If it means more business at a profit for electric railways, it should be followed up.

A Reduction in Coal Prices Would Help Business Revival

COAL being one of the important raw materials that go into the manufacture of transportation, electric railway officials may well concern themselves with the possibilities of reducing this fundamental expenditure, to keep pace with the healthy readjustments taking place in the expenditure for railway labor. They have this direct interest in a lowering of coal prices and also an interest in it indirectly for the reason that a substantial reduction in coal prices would be a strong influence toward the revival of business generally, which means an improvement of the market for transportation.

It is quite broadly felt that a reduction in freight and passenger rates on the steam roads would tend strongly to stimulate business. Such a reduction would be much more readily possible if a substantial decrease in the cost of coal to the trunk lines themselves could be effected. Such a reduction would be doubly effective. With a cut of 25 cents per ton to the railroad, its transportation cost and therefore charge could be reduced and thus the ultimate consumer benefit to an extent of possibly 40 to 45 cents per ton.

The whole country is interested in why reductions are not made and the outstanding reasons seem to be: the high labor cost in the mines, manipulation of the market and speculation by coal dealers and operators, too high margins of profit all around, inclusion in the price of overhead costs on undeveloped holdings, high freight rates, etc.

Some definite evidence of the effect of miners' wages on the price of coal is afforded by the following cost figures taken from a mine owned by a large traction company. In 1917, this company engaged a mine operator on the basis of a mining cost of 90 cents a ton with a bonus of one-half any saving under this figure. Without any charge for depletion, bond interest, sinking fund, etc., the pure production cost for April, 1921, was $1.95 per ton, for May $2.28, for June $2.07, and it has averaged $2 a ton for some time past. This is the

direct result of high wages and decreased efficiency of the men, for the traction company buys through no middle man and thus all other factors entering into the ordinary purchase of coal, such as mentioned above, are eliminated. Nor can the high cost be attributed to low production, for this is about constant.

The United Mine Workers are operating on the high scale established by federal arbitration and are strongly opposing any attempt to lower the rates, even arrogantly claiming that no reduction will be accepted at the expiration of the present contract on April 1, 1922. Of course it would be unjust to attempt to take the desired reduction in coal cost entirely out of labor. All these other factors bearing on the price should be carefully considered also. But it would seem practical for the United States Department of Commerce, in its efforts to restore business to normal, to take a deep interest in all the factors of the present coal prices, with a view to exerting its influence along sound lines toward a reduction in the cost of this basic material to all industries. If, among other things, a wage reduction in the mines should be forthcoming, as seems likely, there is precedent for bringing it about in the action of the Railroad Labor Board which recently reduced the wages of railroad employees from the level established by governmental agency.

It should be made clear that the public utilities in urging governmental efforts directed toward reduction in the price of coal are not urging regulation either of the coal industry or of coal prices. A regulated industry itself, the public utility industry does not recommend price regulation as an aid to a healthy business condition. But if the government, in its work of aiding industry, can do anything of a helpful nature along the line of reducing costs, it should have encouragement and assistance.

Constructive Leadership as Well as Regulation

AN EXAMPLE of the opportunity of commissions to assume constructive leadership, and not merely to regulate, is afforded by the present Connecticut developments. This is one of the most interesting and important situations in the railway field today in the problem of articulating the railway and the bus in the transportation business, or of finding which the people want and which can do certain kinds of work the better. These columns have already carried comment on the clear definition of a common carrier which has come from the court procedure; and also of the position of the railway upon whom the burden of making good or going broke is squarely placed. Litigation is now proceeding in both state and federal courts, with the really final verdict probably in the hands of the people.

But it is probably not appreciated by the railway industry, by the bus interests nor by the public to what extent they are all indebted to the Connecticut commission, and largely to its chairman, Richard T. Higgins, for the constructive nature of the developments that are taking place. It has done much to make effective in Connecticut the recommendations of the Federal Electric Railways Commission. The entire legislative accomplishment along railway and bus lines was the result of its analysis and recommendation. The situation created is not merely one of eliminating bus operation from the railway area. That may be one immediate move, but the broader purpose has been to establish the existing agency, the trolley, on a legitimate basis as regards taxes, paving, fare provisions, etc., and to regulate competing agencies so that the railway may prove its ability to serve the public and the public may decide if it really wants the railway or the bus. Variables have been removed as far as possible. The bus has been recognized as necessary in certain places. It is now up to the railway.

While the Connecticut commission was once criticised for entering the field of management in a fare adjustment, it should be pointed out that that error was soon rectified and that the present work of the commission, is even more constructive than mere regulation. It is creative and in the interests of the best public policy. The story is not yet closed in Connecticut—it is a long one, but one can be sure that the commission under its present leadership will play an important and useful part in the solution of one of the vexing problems of the local transportation business today.

Reorganization Plans Are Along Right Lines

AS A RESULT of the work of the special reorganization committee of the American Electric Railway Association, the executive committee has made some constructive recommendations to the membership of that body. These are reviewed on another page of this issue, and copies of the complete report of the executive committee will be mailed from the secretary's office as soon as they can be printed. They are to be acted upon by the association at the annual convention in October.

For the best interests of the association and of the industry, the members should make a real study of these recommendations. It should be noted particularly that the committee provides that at this year's convention consideration of amendments to the constitution will not be limited to the exact wording proposed by the executive committee. Modification may be made and new amendments introduced. What is desired is the real expression of the majority of the membership. These facts make it doubly important that the members study these recommendations, not only to examine what the executive committee has recommended but also what it has not recommended.

Every change which the executive committee recommends is constructive and should be adopted. Prominent ones are membership definitions, organization and operation of the executive committee, improvement of election procedure, stimulation of committee activity and creation of the separate office of treasurer, and making him a member of the executive committee. It is significant that provision has been made for admitting trackless transportation companies to membership. This is no surrender to the "jitney." It is the best step toward a solution of the place of the bus in American urban and interurban transportation.

Perhaps the most important change of all, one upon which President Gadsden has laid stress, is the requirement that the executive committee meet monthly and really manage the affairs of the association. That it has not been done in the past is no reason that it cannot be done in the future. It is done in most other associations and societies—in all of them which really accomplish anything of value, it appears. A meeting of the executive committee of the association on a regular day each month should be as much a part of the duty of a man

accepting the office as is any one of his regular corporate or operating duties. The provision that executive committee members may be represented by personal proxies—a practice already existing, as a matter of fact —should assure good attendance. An assurance of greater continuity in policy in managing the association is contained in the provision for three year terms for the manufacturer and operator members at large with one-third elected each year. This is a healthy move.

Another move that is very good is the provision for pre-election nominations. This is regarded by some as the most valuable result of the whole work. Its advantage is apparent.

Committee activity has always been recognized as a large element in the useful life of the association. The provision for the six standing committees and for periodical committee reports to the executive committee should add vitality to this work and should assist in keeping the executive committee in closer active touch with the association's affairs.

The executive committee policies formally adopted, aside from constitutional and by-law provisions, should also be welcome. Among these are: Small committees with a definite plan for continuity of membership and therefore activity; co-operation with educational institutions; geographical distribution of committee meetings and of representation on committees (this latter has been done, but it has not been a stated policy); and active co-operation with sectional associations and official representation at their meetings.

Aera's policy, particularly with reference to co-operation with the technical press and to avoiding duplication, was brought up, but no formal recommendation was made. President Gadsden's statement, however, that it would be put up to Mr. Welsh to avoid duplication is a step in the right direction. Such a plan if part of the permanent policy of the association would help to co-ordinate all of the energies in the industry.

The Old Order Changes Slowly

IT IS perhaps not unlikely that there will be as much discussion on what the executive committee did not do as on what it did do. By this is meant its lack of action on admitting municipally owned railways and its rejection of the reorganization committee's recommendations regarding vice-presidents and past-presidents.

The executive committee seemed to feel that the practice of having its potential presidential nominees in training should be continued as at present. As stated in the report of the reorganization committee, its purpose, in revising the set-up of vice-presidents, was to make automatic the operation of the resolution adopted last October which said:

> that in view of the great changes which, from year to year and almost from month to month, mark the critical period through which our industry is passing, it shall be regarded as the fixed policy of the association that, in the selection of all its officers, the association will be guided by the requirements at the time, unaffected by the choice of previous years.

Of course the reorganization committee's method of four vice-presidents, two elected each year for two-year terms, is not the only one. Other ways have been suggested. One is that the association elect five of fifteen directors each year for three-year terms and empower these directors to elect the officers from their own membership, or not, as they deemed best. These directors, the officers, the affiliated association presidents and the two junior past-presidents of the American Electric Railway Association would constitute the executive committee. It will be recalled that Mr. Shannahan some years ago headed a Transportation and Traffic Association committee which recommended the election of only one vice-president by each of the affiliated associations so that there should not be a succession extending over three or four years in line for the presidency of these associations. The fact that all of these suggestions were made is indicative of a certain feeling that the present system has weaknesses which should be corrected. There are arguments on both sides. But the association should not, at a time when reorganization for the greatest effectiveness is under way, let the present system continue without full discussion and assurance that it is the best.

The question of service of past-presidents on the executive committee is a similar but somewhat different one. Some have said it is irksome; it has, of course, always been recognized that their advice was valuable. But even if nominally they have no vote, past-presidents who attend executive committee meetings regularly are certain to exercise great influence in its deliberations. The reorganization committee's recommendation of having only the two junior past-presidents as members of the executive committee, and these with a vote, was made with the apparent belief that the responsibility for management should be squarely placed on men elected to the executive committee for definite terms. This practice is followed by the N. E. L. A., A. I. E. E. and other organizations closely allied with the electric railway industry. After a specified term of active office in those societies even the past presidents return to the ranks.

On the question of admission of municipally owned railways, there is divergence of opinion also. As on the two previous questions, where there is divergence it is easier to let present rules apply. But again it is known that many association members are in favor of admitting municipal railways as members. This question was treated editorially in these columns on July 16.

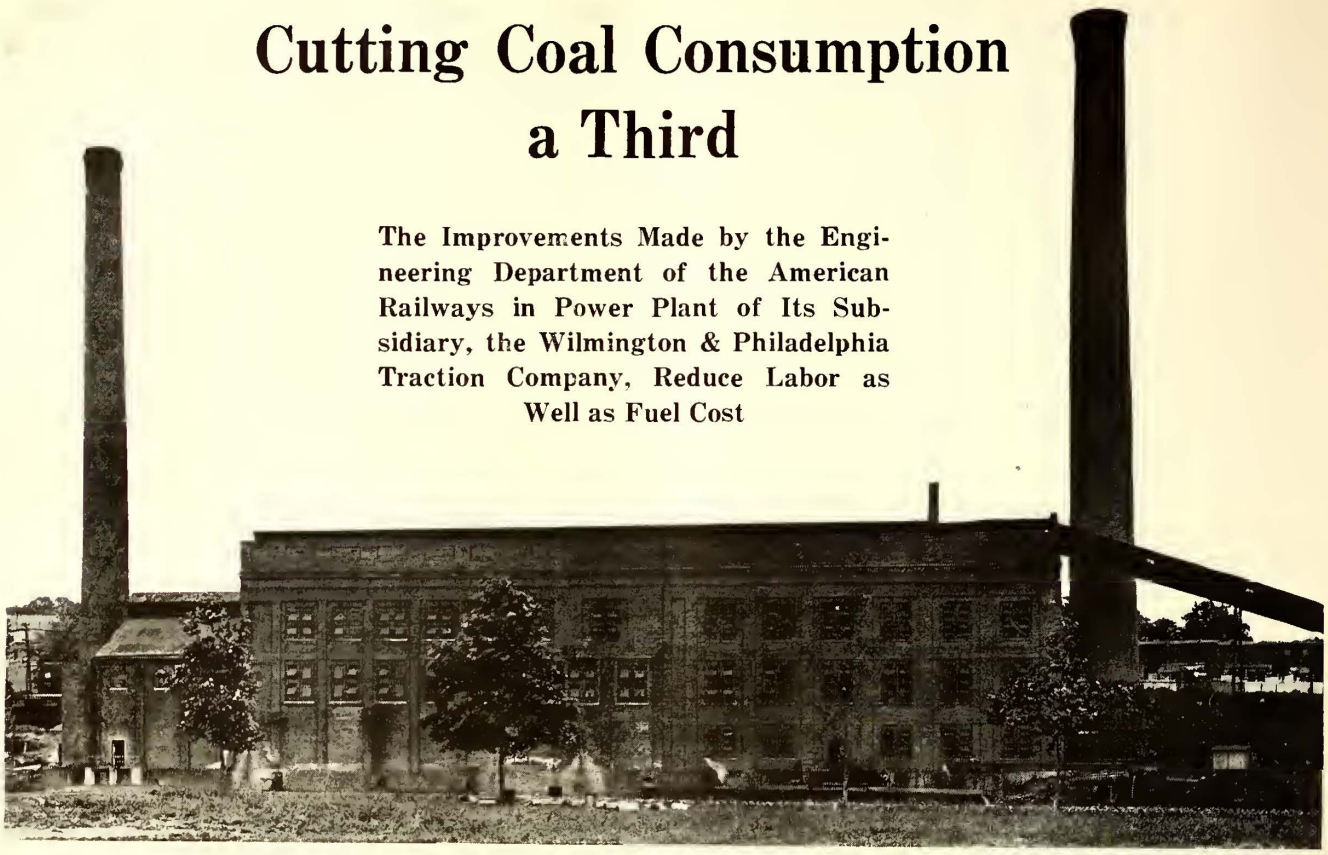
Discussion by Membership Is What Is Now Wanted

THIS extended discussion of the situation is not to impress upon the industry the individual views of the editors of this paper, but to help bring the matter squarely before the membership so that there will be full and free discussion. In all associations, and this is no exception, there is the frequent accusation that policies are "cooked up" in the East and all that the membership can do is to "O.K." or reject. Certainly this is not now so in the American Electric Railway Association as regards the present matter. The door is wide open, the report is now public and open for discussion, and is to be acted on in open meeting and not by ballot. Free discussion is invited by the executive committee.

The ELECTRIC RAILWAY JOURNAL is glad to open its columns and invites a free and full discussion of this report and recommended action. Such discussion is needed to assure intelligent consideration and action at Atlantic City in October. The association is showing new signs of life, and no mistake should be made in recasting its organization and method of operation.

Cutting Coal Consumption a Third

The Improvements Made by the Engineering Department of the American Railways in Power Plant of Its Subsidiary, the Wilmington & Philadelphia Traction Company, Reduce Labor as Well as Fuel Cost



REMODELED POWER PLANT WILMINGTON & PHILADELPHIA TRACTION COMPANY—NEW SECTION AND NEW CHIMNEY AT RIGHT

AT WILMINGTON, DEL., is located the power plant of the Wilmington & Philadelphia Traction Company, which furnishes power for the local railway, light and industrial power requirements. Since 1916 this property has been under the control of the American Railways, the headquarters of which are at Philadelphia. This plant was built in stages, the most recent large improvement in facilities having been the construction of the present main plant under the direction of J. G. White & Company in 1911. The demand on the plant has increased to such an extent by the time that the American Railways took over the property in 1916 an increase in capacity was immediately planned. Even before that year extensions had been inaugurated under the direction of the White company.

Without going into the history of the local power system in detail, it may be said that originally the plant consisted of three direct-current engine-driven units to which were added a 500-kw. and a 1,500-kw. Allis-Chalmers turbine generator units. These were supplemented before the present management took charge by a 4,400-kw. General Electric turbine unit. The plant also comprised, in a separate building, a complete equipment of boilers and two 500-kw. and one 1,000-kw. turbo-generators, inherited from another power enterprise. This is now known as plant No. 2. The machinery had been badly handled so that this plant was of little service in taking care of the growing power demand. It is now used for emergencies only, the turbine room doing duty as a machine shop.

Auxiliary machines in the main plant comprised a 1,000-kw. rotary converter, a 500-kw. motor-generator set for power purposes and two 250-kw. motor-generator sets used as feeder boosters.

At the outbreak of the great war the company had to take care of the enormously increased demand for power only the assorted equipment listed above, part of which was in bad repair. As soon as possible a 7,500-kw. General Electric turbine unit was added, but wartime industries overloaded the plant seriously. To add to the difficulty, the 4,400-kw. generator burned out, requiring rewinding of both stator and field. The blading and diaphragms of the turbine were also damaged. The first stage had to be rebladed and three new diaphragms were required. Opportunity was taken to improve the ventilating system of this unit by changes in the foundation, allowing the incoming air to enter from outside the building instead of as before from the hot pump pit below. This change also facilitated the installation of an air washer in the air intake.

The original two Allis-Chalmers turbines were also rebuilt and a new system of steam piping for them was installed.

General Rehabilitation Undertaken

The demand for power continued to increase to such an extent that in 1917 plans were made for the installation of a 12,500-kva. Westinghouse turbine-generator unit. This led to a study of the plant as a whole and an extensive program of changes, now practically complete, was laid out. The result has been that the coal consumption of the plant has been reduced nearly 1 lb. per kilowatt-hour, or from about 3.1 to 2.1 lb. The operating cost in labor has also been reduced about 40 per cent. The capacity of the plant has been more than doubled, last year's output having been more than 70,000,000 kw.-hr. The saving in fuel over what otherwise would have been consumed is not less than $150,000 and that in labor $30,000 per annum.

The new turbine unit is a three-phase, 60-cycle,

1,800-r.p.m. machine. The voltage generated is 11,000, this being the only 11,000-volt machine in the plant. The best efficiency of the unit is at about 10,000 kva. or 8,000 kw., at which load the steam consumption is 13.3 lb. per kilowatt-hour, with 150 deg. superheat, 195 lb. throttle pressure and 28 in. vacuum, referred to a 30-in. barometer.

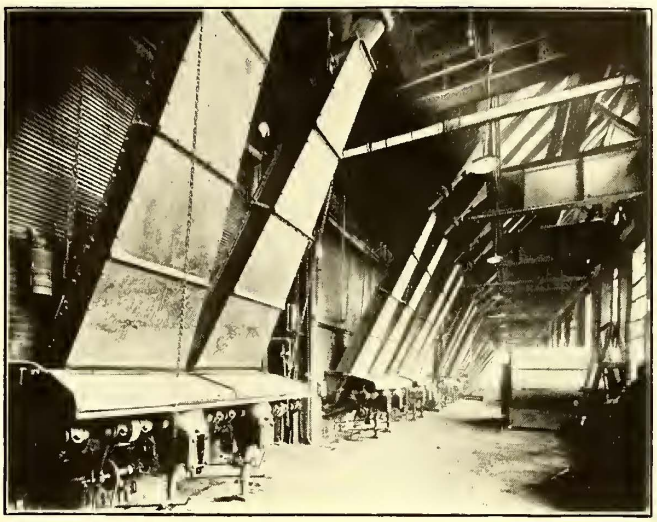
The installation of the unit presented some difficulty as the depth of the basement in the building was only 10 ft. below the engine room floor. This space was also partly occupied by two old engine foundations which had to be removed. A depth of 22 ft. was necessary for the condenser and pumps.

The old engine foundation, which rested on solid rock of a very hard kind, had to be blasted out with dynamite. In this blasting there was considerable danger to the adjacent units, which were kept in continuous operation. Twelve feet of rock had to be removed, and the foundations of the building and of the other generating units had to be underpinned before foundation work for the new unit could be commenced.

Flexible Air-Washing and Cooling System

The generator of the new unit is equipped with an air-washing and cooling system with a capacity of 35,000 cu.ft. per minute. This was so installed that the air can be taken either from outside or inside the building and it can be delivered either out of doors or indoors. This makes it possible to accommodate the ventilation to the climatic conditions.

Unfortunately the space available for the new unit was not what might have been desired so that it was difficult to accommodate the auxiliaries in making the layout. For example, the air-washing and ventilating system required more space than was available above ground. It was necessary therefore so to design the generator foundation as to provide two compartments, one for air inlet and the other for outlet. This part of the foundation was carried down 8 ft. below the first basement floor, and underneath this floor two concrete air ducts were built, each 5 ft. x 7 ft. One is connecting the air washer with the air inlet chamber in the generator foundation and the other connecting the air outlet chamber with the distribution stack.

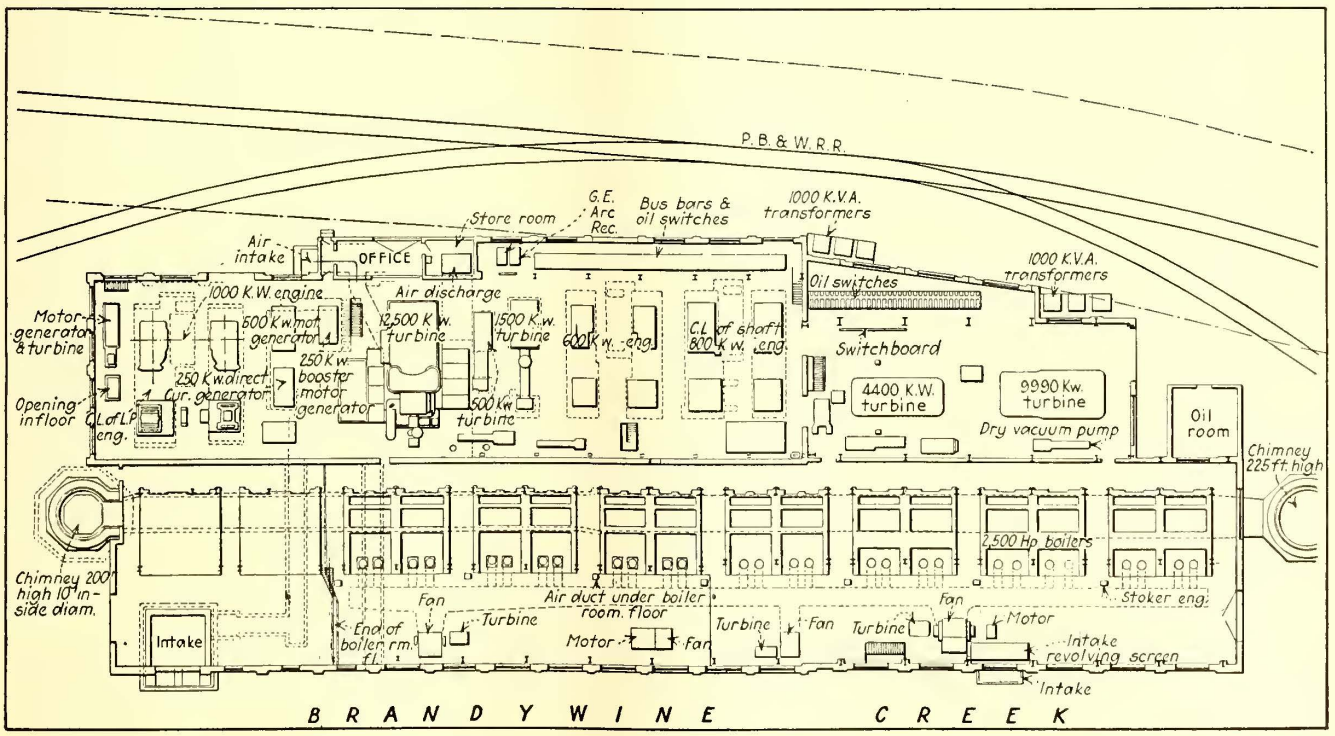


Looking Down the Boiler-Room Firing Aisle

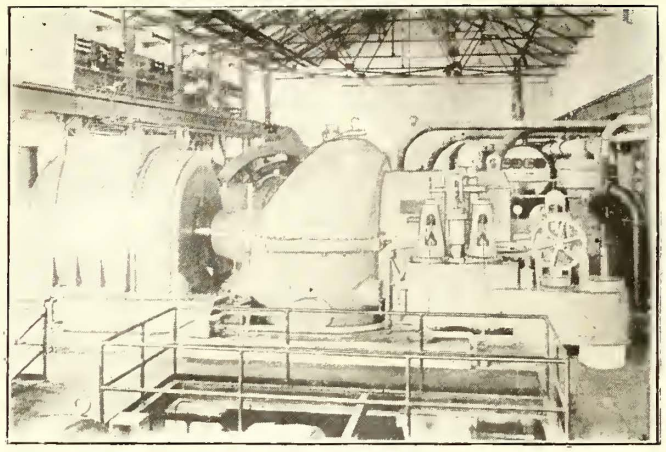
Any one not familiar with this installation would have difficulty in locating the air-washing system of the unit, for it is not visible at the floor level. This arrangement has the advantage of leaving all floor spaces in the basement free and unobstructed, thus facilitating the work of the operating crew.

The air circuit is by-passed around the washer so that the latter can be repaired without interfering with the generating unit. In this case the air passes through two rows of fine mesh screen before entering the generator. The outdoor intake for the air is through louvers and brass wire screens of 24 mesh, No. 30 gage.

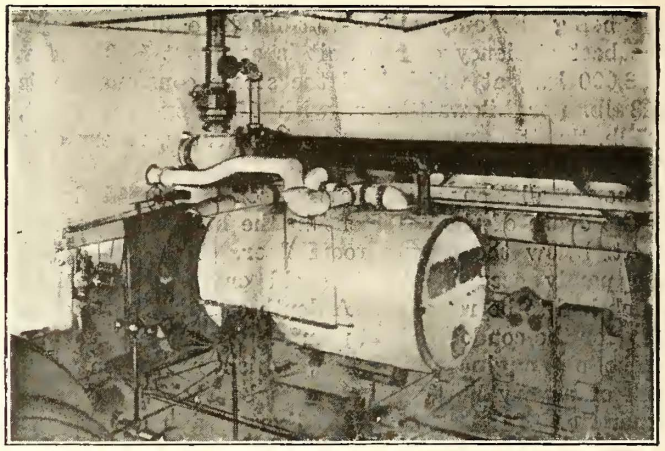
The turbine is direct-connected through a 6-ft. x 12-ft. copper expansion joint to a 17,500-sq.ft. surface condenser. The condenser auxiliaries comprise two



General Layout of the Power House



NEW 12,500-KW. TURBINE UNIT



LOOKING DOWN ON FEED-WATER HEATER OF 20,000 HP. CAPACITY

20,000-gal. (per minute) centrifugal circulating pumps for cooling water, two 350-gal. centrifugal hot-well pumps and two dry-vacuum pumps, the auxiliaries thus being in duplicate, only one set of pumps being in use at a time. One each of the circulating pumps and of the hot-well pumps is motor-driven, while the rest are steam-driven. The motor-driven pumps were installed both to insure flexibility and to assist in maintaining high point efficiency through control of the heat balance.

The condenser is also connected to a 30-in. Cochrane multiport free-exhaust valve. This allows the exhaust from the turbine to pass automatically to the atmosphere in case the vacuum is lost or in case it is necessary to run the turbine under high pressure.

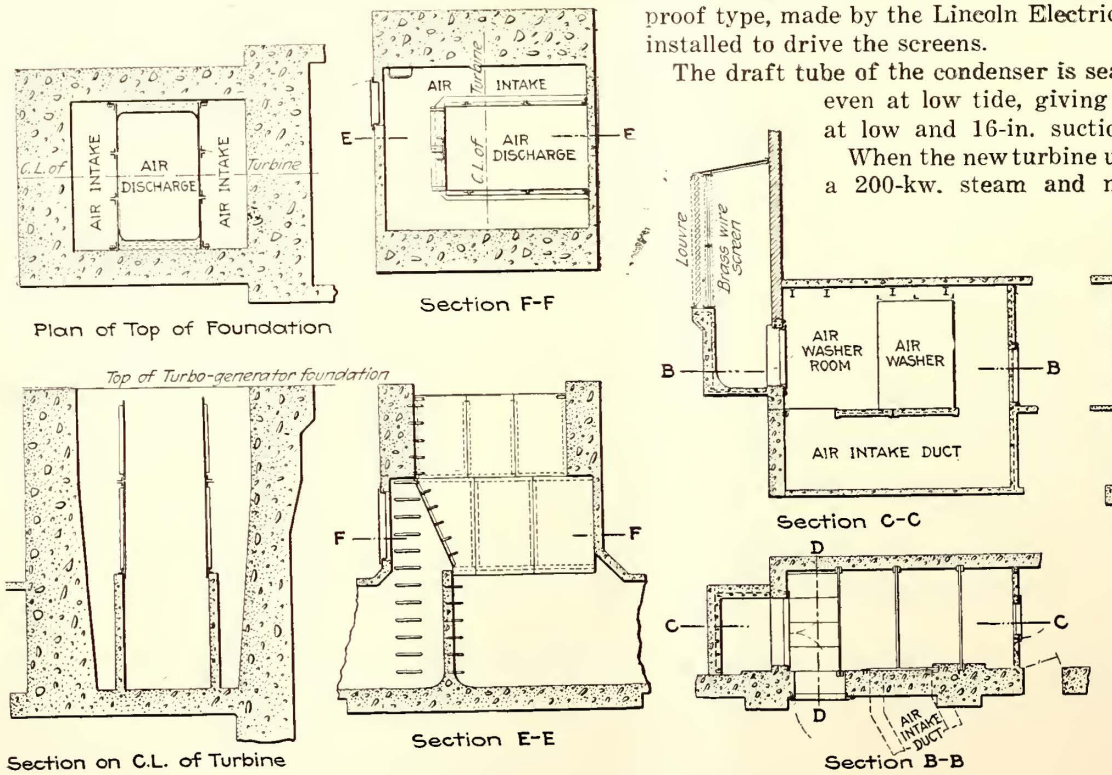
Steam is furnished to the turbine through a 12-in. pipe which connects with the main header in the boiler room. In this 12-in. pipe, close to the turbine, is a 54-in. Sweet receiver separator. The separator is intended merely to safeguard the turbine in case the boilers should foam or too high a water level be carried in the boilers. Mention has already been made of trouble in this plant through the carrying over of water, and it is desired to prevent a repetition of this.

The general placing of this plant is unfortunate in that the boiler room, instead of the turbine room, lies along the source of circulating water, Brandywine Creek. This makes it necessary to carry the circulating water under the boiler-room floor. The new unit requires an entirely new layout of circulating water system. An intake pit was blasted from the solid rock from the creek to a point inside the boiler-room basement, to a depth to bring its bottom level with the bottom of the creek. A grating of flat steel bars was placed over the inlet to the pit.

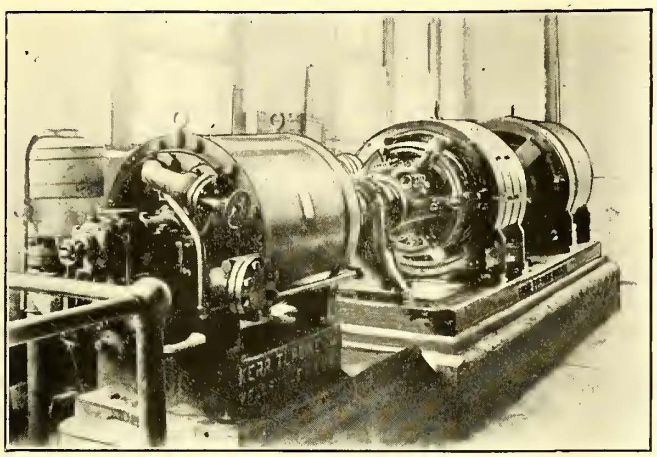
In the pit inside the building two motor-operated revolving water screens, made by the Chain Belt Engineering Company, were installed to prevent the ingress of leaves, etc., to the 30-in. suction pipe which leads from this pit to the condenser circulating pump. As the vicinity of this intake is damp, motors of the waterproof type, made by the Lincoln Electric Company, were installed to drive the screens.

The draft tube of the condenser is sealed in the creek even at low tide, giving a 22-in. suction at low and 16-in. suction at high tide.

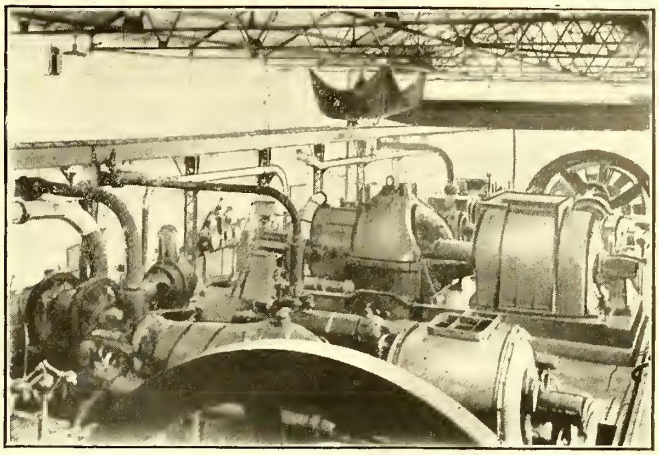
When the new turbine unit was installed a 200-kw. steam and motor-driven ex-



SOME DETAILS OF THE GENERATOR VENTILATING SYSTEM



THE TURBINE AND MOTOR-DRIVEN EXCITER UNIT



GENERAL VIEW IN THE TURBINE ROOM

citer was also put in, its capacity being sufficient for the entire load of the station as it exists today. At one end of the unit is a 300-hp. Kerr turbine, in the middle is a 1,600-amp., 120-volt Burke generator, and at the other end is a Burke motor of 300-hp. capacity. The speed of the unit is 1,200 r.p.m. The motor is of the slip-ring, three-phase, 60-cycle, 2,300-volt type.

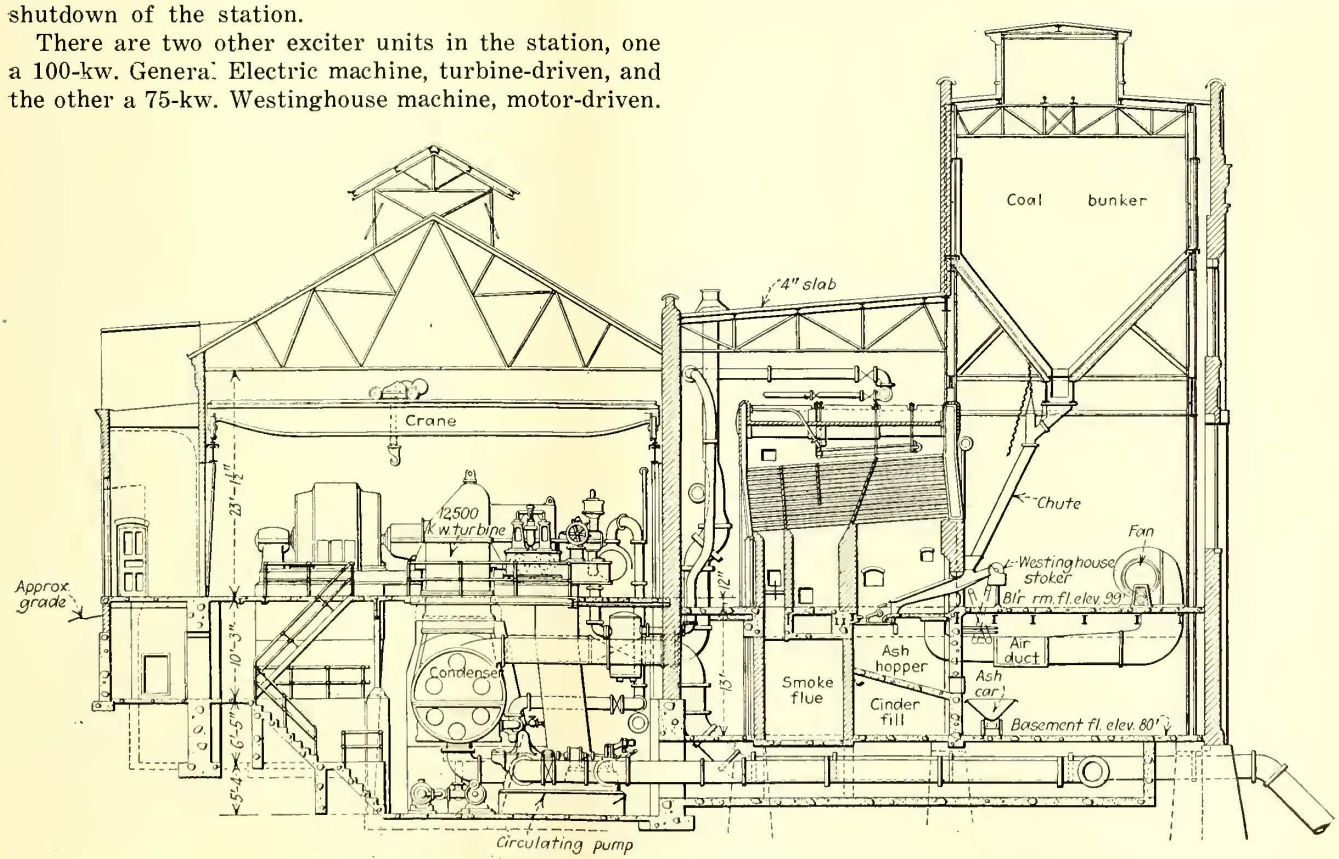
This type of exciter unit was selected for two purposes, first, to assist in maintaining the heat balance of the plant, and, second, to provide the maximum of reliability. The turbine is provided with a governor so designed that it can be set by hand either to increase or to decrease the speed of the turbine, thus relieving the motor of all or part of the load or throwing the entire load on the motor as desired to maintain the proper temperature in the feed-water heater. Further, if the motor should fail or trip out for some reason the turbine will automatically take the load that is being carried by the generator, thereby preventing a shutdown of the station.

There are two other exciter units in the station, one a 100-kw. General Electric machine, turbine-driven, and the other a 75-kw. Westinghouse machine, motor-driven. All of the exciters are controlled through a separate switchboard on the main floor through solenoid-operated, direct-current circuit breakers operated from the main switchboard.

IMPROVEMENTS IN THE BOILER EQUIPMENT

The boiler equipment had to be augmented, of course, to make up for the increase in turbine capacity. The boiler room was extended 100 ft. and new overhead concrete-steel bunkers, coal conveyors, etc., were installed. Six new 550-hp. Edgemoor water-tube boilers were added, these being provided with Westinghouse underfeed stokers. The boiler-room improvements also included the necessary stoker drive, ash pockets, bunker spouts, etc. The earlier boilers numbered six of 500-hp. and two of 550-hp. capacity, all Edgemoor and of the four-pass type, making fourteen boilers in all at the present time.

Incidentally a new main header was installed for



CROSS SECTION OF WEST END OF POWER HOUSE

several of the old boilers. The larger of these boilers were equipped with Westinghouse stokers and the smaller with Taylor stokers, with the exception of two boilers on which the original Wetzel stokers, designed for natural draft, have been allowed to remain.

The increased capacity of boilers involved a corresponding increase in boiler feed pumps, formerly three in number. It was deemed most economical to put in two new turbine-driven feed pumps, each having a capacity of 850 gal. per minute, sufficient for the entire station. They will produce a working pressure of 250 lb. per square inch, or an excess of 50 lb. over the boiler pressure. The pumps were made by the Cameron Steam Pump Company, and the turbines used for driving them are of the latest Westinghouse type. New feed-water mains were provided for these pumps, and these were connected at intervals to the old feed line, giving a flexible feed system. Automatic valves are installed also to connect the feed line with the city water system in emergency and to insure water supply for the cooling of bearings.

THIS TANK ELIMINATES THE WATER BILL

DETAILS OF STOKER-BLOWER UNITS

There are four fans in the boiler room to supply air to the stokers. Like the other auxiliaries, these are designed to assist in maintaining the station heat balance. There are two fans of 50,000 cu.ft. capacity each. At present these are motor-driven, but later they will be equipped with turbines also. The newer units are respectively of 65,000 and 85,000 cu.ft. capacity and are driven both by turbines and slip-ring induction motors. The connection to the turbines, which are of the high-speed type, is through reduction gears, while the motors are direct connected.

The blower units give a working pressure of 6 in. (of water), and they insure a high degree of flexibility in operation.

AUXILIARIES IN THE BOILER ROOM

The engineering department of the American Railways believes in the use of the latest devices for improving boiler-room operation. To this end the boilers were all equipped with Diamond soot blowers. Stetz continuous feed-water regulators and a balanced-draft system installed by the Engineering Company. The feed-water regulator operates independently of the regular feed-water line.

A new Cochrane feed-water heater, of the open type, and having a capacity of 20,000 boiler-hp., was provided to take the exhaust steam from all auxiliaries and heat the water for the entire plant. Space being at a premium for this unit, it had to be set up on a pedestal behind one of the old engine units. It thus takes practically no floor space.

All of the boilers are equipped with Foster superheaters to provide a working superheat of 150 deg. Each boiler is furnished with a Precision "three-in-one" gage to permit supervision of the draft conditions.

For the new boilers a brick and concrete smoke flue was built connecting with a new 14-ft. 200-ft. radial brick chimney. The new flue is an extension of the old steel smoke flue leading to the old radial brick chimney. This arrangement, together with the necessary flue dampers, gives a flexible arrangement of flue and stack connections.

An improved ash-handling outfit was another feature of the rehabilitation. An overhead storage bin was erected in the yard and furnished with a Beaumont ash hoist. A track runs along behind the boiler ash hoppers, from which the ashes are collected in small cars. These are hauled by electric tractors to the hoist. From the storage bin the ashes are distributed by electric cars belonging to the company and designed especially for this work.

A NOVEL COAL-HANDLING OUTFIT

Now a word as to coal storage. When the American Railways took charge of this plant little space was available for this purpose. A new piece of ground was promptly purchased and graded to the same level as the old yard. On the enlarged space a drag-scraper coal-handling system, designed by the R. H. Beaumont Company, has recently been installed. This system consists essentially of a cable or set of cables, driven by a reversible, motor-operated drum and carrying special scrapers which are used to drag the coal as desired. The driving mechanism is mounted in an operating tower from which all parts of the yard are visible, and the cable loops around pulleys attached to substantial posts set around the edge of the yard. The stakes or posts at Wilmington consist of 12-in. Bethlehem section steel beams set deep in rock and concrete. With the equipment installed, two scrapers can be used, but one is sufficient at present. One man can handle the work. The same equipment reclaims the coal from storage, delivering it to the crusher through a conveyor. The company now has storage capacity for from 10,000 to 15,000 tons of coal and can distribute easily 60 tons per hour with the drag-scraper outfit. In a pinch 50 tons can be distributed in thirty minutes and the pile can be spread evenly to a depth of 20 ft.

The power plant is located alongside the main line of the Pennsylvania Railroad, from which a siding runs into the yard. In regular operation some coal is dumped from the cars direct to the crusher, but most of it goes into storage.

From the crusher the coal goes to an elevator, which delivers it to an inclined belt conveyor, and thence to a traveling dumping carriage, which distributes it throughout the bunker in the boiler house. This bunker is 200 ft. long and has a capacity of 2,000 tons.

ELIMINATING THE WATER BILL

The company formerly purchased most of the boiler feed water from the city system, the bills amounting to as much as $1,200 per month. To save this expense a 75,000-gal. overhead water-storage tank has been installed in the yard and piping laid to permit this to be filled direct from Brandywine Creek. Water is pumped into this tank by a motor-driven centrifugal pump, which is controlled by a float in the tank, insuring a predetermined level. A steam-driven pump is also connected in the pipe line as a reserve. The tank was built by the Chicago Bridge & Iron Works. Two sand filters

have been installed in the water system, with provision for introducing alum later if this is found necessary.

Arrangements have recently been perfected also by which the 500-kw. Allis-Chalmers unit in the power plant can be used as a house-service unit. This has been furnished with step-down transformers to reduce the three-phase voltage from 2,300 to 440, from which power is drawn for the plant auxiliaries.

This turbine will be operated at high pressure, the exhaust steam being used in the feed-water heater.

CONCLUSION

This article does not purport to be a complete list of the changes which have been made in the Wilmington plant. Others, including the placing of the main switchboard in a gallery instead of upon the main floor, are contributing to the general saving. Much credit is due the mechanical engineer of the American Railways, A. Kuylenstjerna, working with the general manager, H. J. Crowley, for enlarging and rehabilitating this plant under trying conditions, without interfering with service and with a gratifying financial return for the investment made. These changes have enabled the superintendent of power generation in charge of the station, George T. Bromley, to obtain more efficient operation.

Des Moines Loses Car Service

All Kinds of Improvised Vehicles Used—Merchants' Association Takes Action to Relieve Situation—Labor Union Interests Seeking Restoration of Service

DES MOINES now occupies the unique if unenviable position of being the largest city in the United States without street car service.

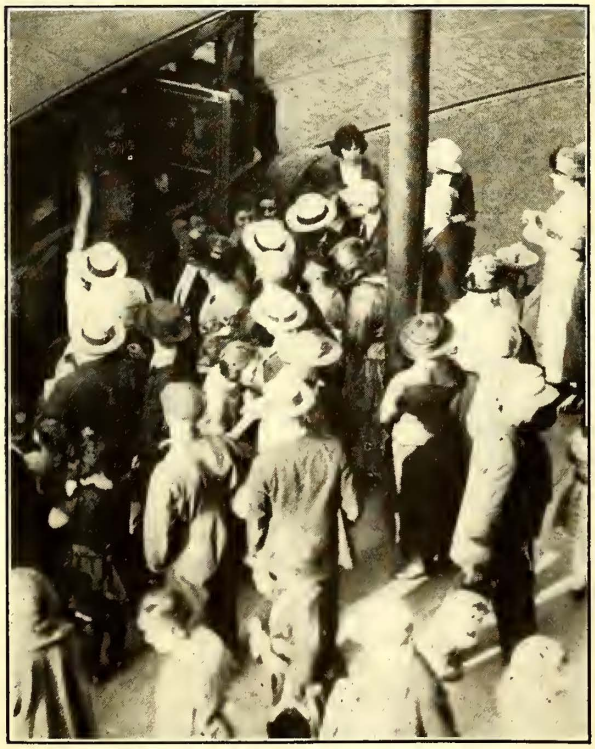
The shutdown of traction facilities in Des Moines which came at midnight, Aug. 3, following an order to that end by Judge Martin J. Wade of the Federal Court, is a direct result of the lackadaisical attitude maintained by the City Council and citizens of Des Moines toward the transportation problems of the city during the past year.

As a result of the shutdown, transportation has been in a condition of chaos ever since the morning of Thursday, Aug. 4. Buses which for the past few months have been petted and pampered by the City Council have utterly failed to meet the situation, and as this article is written the business interests of the city have evidently finally become aroused and are working desperately to find a solution.

Business men are being backed in their fight by the employees' union, which has the support of union labor in general, in a demand to the City Council that the buses be ruled from the streets and some plan developed which will permit of a resumption of street car service. While the business men and labor leaders may not agree as to details they are unanimous that service must be restored.

The first tangible ray of hope for a settlement came as a result of a meeting Saturday morning between officials of the Des Moines City Railway and of the Retail Merchants Association. While both parties to the conference decline to give definite details of its outcome it is said that F. C. Chambers, general manager of the Des Moines City Railway, was commissioned go to Chicago to present to the owners and bondholders the counter proposal agreed upon. Information as to the plan is not authoritative but is said to be based upon a plan for a 7-cent fare with the buses ruled from the streets, the owners or bondholders to advance the $300,000 necessary to meet the overdue interest, and to repurchase equipment which will restore service to a 125 car basis. The main stumbling block of the plan is to the doubt as to whether the $300,000 can be secured. Earlier in the week A. W. Harris advised two of the Des Moines daily newspapers that he would not put any more money into the Des Moines property until he was given fair treatment by Des Moines.

If the financial obstacle can be overcome it is probable



BUSES ATTEMPTING TO HAUL THE CROWDS

EVEN THE POLICE PATROL WAGONS WERE USED

that Judge Wade will be asked to order a resumption of service and the General Electric Company asked to replace the substation equipment which was removed a few weeks ago and which caused the service cut of approximately 50 per cent.

While the retail merchants and company officials were in conference a delegation of union labor men representing practically every union in the city waited on the City Council and demanded that the Council take immediate steps to end the difficulties. No words were minced by the labor leaders, and at the end of the meeting members of the Council agreed that they were willing to vote for an anti-bus ordinance if fares could be reduced to 7 cents. Mayor Barton agreed to get in immediate touch with Corporation Council Miller who is out of the city on his vacation and ask him to return to the city and prepare a new franchise proposal. Members of the Council agreed to hold a Sunday session if Judge Miller could return to the city by that time.

Buses Don't Give Enough Service

That the buses have failed miserably since the beginning to meet the situation is proved by a vote taken by one of the daily papers late last week as to the preference of citizens as between street cars and buses. In a two days' poll 1,056 people voted for the return of street cars while 202 preferred buses.

Saturday the bus operators had seventy-two buses in service and made the claim that on Friday they had hauled 55,000 people. Additional buses were shipped to the city daily for temporary service, but the bus owners association refused to make preparations for a permanent service by the installation of satisfactory buses unless they were given a guarantee by the City Council of at least a year's service on carline streets. Of the seventy-two buses in service the latter end of last week about half were of a fairly satisfactory kind. The remainder were makeshift, many of them being home-made bodies on trucks. So far, the City Council has refused to make any arrangements for a permanent grant and has turned a deaf ear to proposals of at least three men who claimed to represent Eastern capital which would take over the transportation of the city if a grant was given to them.

As yet the shutdown of the city plant has not stopped service of the Inter Urban Railway which is owned by the same interests as the Des Moines City Railway. The main power plant is still being operated to furnish power for the interurban lines although no definite statement has been made as to how long this will continue. If the Inter Urban was forced to abandon service it would cause serious embarrassment to the work of dismantling Camp Dodge, as well as interfering with the annual encampment of the national guard of Iowa. It would also cause serious difficulties for the Des Moines Electric Company which secures its coal supples from mines located on the interurban.

The comparative cost for a million tractive-miles between the former steam service and the electric service now maintained on the Norfolk & Western Railway, as given recently in the *Railway Electrical Engineer*, shows that electrification is responsible for a 12½ per cent saving. The cost per million tractive-miles of steam operation was $29.90, while that for electric was $26.20. In this comparison all costs entering into operation, as well as interest and depreciation, have been taken into account.

North Shore Makes Safety Record

By Active Attention to Safety Methods the Road Has Greatly Decreased Its Accident Record While Doubling Its Car Mileage

IN AN article in the *National Safety News* for June, on the safety work of the Chicago, North Shore & Milwaukee Railroad of which Britton I. Budd is president, it is pointed out that while this company has increased the number of passengers carried 100 per cent, the car mileage 100 per cent, the passenger revenue 300 per cent and the freight revenue 700 per cent in the last five years, it has cut down its fatal accidents 77 per cent and reduced the total accident costs to 1.18 per cent of its gross revenue. The underlying reason for this showing is attributed mainly to the attitude of the president in heading an extensive safety organization, the functioning of which was described in this paper, issue of Feb. 22, 1919, p. 359. The men all through the organization have been encouraged to make suggestions that would improve the safety of the road. Furthermore, the company has taken every possible means of preventing accidents, most of which have been treated in this journal in prior issues.

One interesting detail mentioned in the article referred to is the practice of the motormen, upon seeing a trespasser on the track, to throw a sealed letter out to him which reads as follows:

> Don't you realize there is serious danger to anyone walking these tracks, owing to the fact that our cars are run at high speed? If the motorman should fail to see you in bad weather, or while rounding a curve or for some other reason, you would be placed in imminent danger of being killed or injured. It is our desire to cultivate the safety work on this road to a point where every accident of an unavoidable character will be eliminated, and we hope that you will at once discontinue walking on these tracks so that the chances of your being injured or killed will be done away with.

Another interesting point related is the practice of the company in maintaining instruction signs for the motormen at numerous points along the right-of-way. Every approach to a curve, every highway crossing, every railroad crossing, every station and the speed at which the train should pass such points, is called to the motormen's attention 1,000 ft. away from that point. The signs read thus: "Curve 100 ft., 15 miles"; "Railroad crossing 1,500 ft., 20 miles." There is thus no chance for the motorman to forget danger points or what speed to operate in passing them.

The North Shore road is also extending its safety work to the communities through which it operates. It is organizing civic safety associations in each city and is sending its own woman lecturer into the public schools to give talks on safety to the children. Last year this woman made 667 talks in seventy-seven schools and thus reached 25,000 children along the company's right-of-way. Furthermore, the company is placing in the hands of the principal of every school in the territory served, a book entitled "Methods for Instruction in Accident Prevention for Use in Public Schools." The extent to which the co-operation of the public and community leaders in this work is being secured was well demonstrated by a recent meeting at which the Waukegan Civic Safety Association was organized, where the principal of the local high school, the editor of the local newspaper, the judge of the local court, the mayor of Waukegan and the mayor of North Chicago were present and pledged the fullest co-operation to the officers of the road.

Measuring Service to the Public

The Riding Public Is Interested in Three Things: Car Frequency, Speed and Fare —How the Status of the Winnipeg Railway Was Set Forth in These Particulars

BY C. H. D. DAHL, B. A.
Statistician for the Winnipeg Electric Railway

THERE are in the main just three things about a street railway system which interest the ordinary car rider. One is how long he must wait for a car on which to ride, the second is how much he must pay in order to ride, and thirdly, he is interested in the speed with which the cars travel. Oh, there are other factors which are important, such as the courtesy displayed by the conductor when making change; the general appearance of the car, its sanitary condition, its riding qualities and so on, and a number of other things perhaps—but these miscellaneous factors occupy only the periphery of the rider's interest.

SIGNIFICANCE OF CAR-MILES PER MILE OF SINGLE TRACK

The headway of cars is best gaged by the car-miles per mile of single track within a specified time. Usually a calendar year is employed for the time factor. The headway is inversely proportional to the car-miles per mile of single track per year. The accompanying table illustrates this. It is assumed that service is furnished by the cars for an average of eighteen hours per day.

TABLE I—SHOWING INVERSE RELATION BETWEEN CAR-MILES PER MILE OF SINGLE TRACK PER YEAR AND AVERAGE HEADWAY OR INTERVAL BETWEEN CARS

Car-Miles per Mile of Single Track per Year	Average Headway or Interval Between Cars
98,550	4 minutes
78,840	5 minutes
65,700	6 minutes
56,310	7 minutes
49,250	8 minutes
43,800	9 minutes
39,420	10 minutes

AVERAGE FARE AND SPEED

As a measure of the cost per ride there can, of course, be no better measure than the fare paid. The use of different fares by different classes of passengers, or in different periods of the same year as a result of changes in fares, or differences based on quantities of tickets purchased make it desirable to employ the average fare for the period as a gage of the ride cost. The average fare is obtained by dividing the total passenger revenue by the number of revenue passengers.

Perhaps nothing is quite so testing of the car rider's patience as finding himself on a car which stops on a passing track for any length of time. Delays in loading or unloading passengers are also annoying, for while the rider is willing to concede some time for this purpose, in fact his primary interest is wrapt up in himself—it may be that he is tardy for tea, for the theater, or some other appointment; possibly he is merely a victim of the contagious anxiety displayed by fellow riders to get somewhere quickly—at any rate, delays annoy him. It the jitney possesses any popularity as a means of urban transportation, then the speed with which it gets passengers to their destinations is very largely responsible for this popularity. Lack of equivalent speed in electric railway systems serves as a subsidy for the jitney.

USE OF ARRAYED DATA IN MAKING COMPARISONS

A. W. McLimont, vice-president of the Winnipeg Electric Railway, desired to place before the public of Winnipeg the facts with reference to the quality of service and fares of the street railway. To do this, comparisons of car-miles per mile of single track per year and average fares were made with nineteen selected electric railway systems of United States cities having populations and operating conditions somewhat comparable with that of Winnipeg. A table was prepared in which the cities were arrayed according to size from the largest down—the names of the cities occupying the middle column of a three-column table. The first column contained the car-miles per mile of single track for all cities, and the average fares were similarly arranged in the third column. In order to identify the car-mile of single track and average fare belonging to any particular system, a small exponent or index figure was placed over each, corresponding to the index down immediately above the name of the city in which the system was located. To bring special attention to the status of the Winnipeg system, heavy arrows were drawn from the name of the city to car-miles per mile of single track as shown for Winnipeg in the first column of the table and from the name of the city to the average fare for Winnipeg as shown in the third column.

This table appeared in June 15 issue of the *Winnipeg Electric Railway Public Service News*, a four-page paper published semi-monthly for the purpose of informing the public of the company's problems and fostering more amicable relations between the company and its patrons.

Table II on page 240 is a copy of the table in the company's paper excepting that instead of showing the names of the cities in which the transportation systems compared are located these are represented by the various letters of the alphabet. L represents Winnipeg, Canada. In the table as printed the words "high in service" were printed opposite the figures giving car-miles per mile of track for Winnipeg and the words "low in fare" opposite the figure showing the municipal fare. The figures in the two columns representing Winnipeg were connected with "L" by two arrows. All data were taken from traffic ratios received from the American Electric Railway Association and are therefore actual.

Table II affords a good means of conveying to the public, information concerning the kind of service rendered and the fare situation of a particular system compared with other systems, but it is just a step further to combine the car-miles per mile of single-track factor with the fare and speed factors and arrive at what may be termed an efficiency index.

TABLE II—SERVICE AND FARE STATISTICS FOR 1920 OF WINNIPEG AND OF NINETEEN UNITED STATES CITIES HAVING POPULATION OVER 100,000 BUT UNDER 800,000

Car Miles per Mile of Single Track	Cities Arranged in Order of Population	Average Fare (Cents)
98,380[1]	*A*[1]	7.516
93,650[9]	*B*[2]	7.35
67,701[12]	*C*[3]	7.21
84,440[3]	*L*[4]	7.22
78,550[5]	*E*[5]	7.07
73,910[5]	*F*[6]	6.99
72,170[14]	*G*[7]	6.43
71,230[2]	*H*[8]	6.213
70,570[7]	*I*[9]	6.214
64,470[4]	*J*[10]	6.210
60,480[13]	*K*[11]	6.118
59,990[17]	**L**[12]	6.08
58,700[11]	*M*[13]	6.019
54,030[18]	*N*[14]	5.815
47,690[20]	*O*[15]	**5.612**
46,400[8]	*P*[16]	5.611
43,320[10]	*Q*[17]	5.417
42,910[19]	*R*[18]	5.06
36,600[16]	*S*[19]	5.04
24,630[15]	*T*[20]	5.020
63,491	Average	6.2

The efficiency index is the product of three percentages namely, (1) the percentage which the car-miles per mile of single track of a particular system is to a given base; (2) the percentage which the average fare for this particular system is to a given basic fare, and (3) the percentage which the speed bears to a basic speed.

For convenience in computing the first-named percentage 100,000 car-miles per mile of single track is adopted as a base. Another merit of this base is that it is large enough to avoid rating practically any system over 100 per cent in point of service as measured by car-miles per mile of single track.

The second or fare percentage is reached by assuming 5 cents as the basic fare. Few if any electric railways will be rated over 100 per cent on this basis now. This basic fare is divided by whatever fare the percentage is desired for.

The third or speed percentage is arrived at by assuming 10 m.p.h. as base. This makes it simply necessary to manipulate the decimal point to get the percentage for any particular system, granted of course that the speed is given. Table III shows the efficiency indices for the twenty systems dealt with.

There are a number of advantages connected with the efficiency index as described in this article but perhaps the most important are as follows:

TABLE III—EFFICIENCY INDICES OF TWENTY ELECTRIC RAILWAY SYSTEMS FOR YEAR ENDED DEC. 31, 1920

Location	Car Miles per Mile of Single Track Percentage (x)	Average Fare Percentage (y)	Speed Percentage (z)	Effiiciency Index Per Cent (xyz)
1. L	87.7	89.3	89.5	70.0
2. D	64.5	100.0	101.8	65.6
3. F	73.9	100.0	85.8	63.5
4. A	98.4	69.5	92.8	63.2
5. C	84.8	78.1	88.0	58.0
6. I	93.6	72.5	84.6	57.5
7. N	72.1	80.5	92.9	53.8
8. E	78.6	68.4	91.7	49.4
9. Q	60.0	92.5	88.1	49.0
10. K	58.7	89.3	91.6	48.0
11. G	70.6	71.5	92.8	46.9
12. B	71.2	69.5	92.9	46.0
13. M	60.5	80.5	93.4	45.5
14. T	47.7	100.0	88.4	42.0
15. R	54.0	82.0	86.2	38.2
16. H	46.4	83.3	90.6	35.1
17. J	43.3	80.5	89.9	31.3
18. S	42.9	83.3	82.7	29.5
19. P	36.6	66.7	90.5	22.1
20. O	24.6	87.3	87.3	18.5
Average (simple)	63.4	80.5	90.1	46.0

1. The index is based on absolute units so that it may be used to compare different systems for the same period or the same system for different periods.

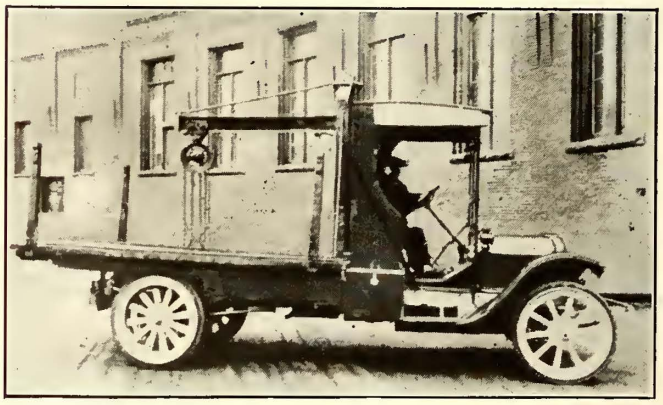
2. The index is a composite measure of the three factors concerning service which interest the car-rider, viz., headway, fare and speed.

3. The index is quite sensitive to differences in the measure of any one factor of service. This is evident by observing the range of the indices for the twenty systems considered in Table III.

It must not be inferred that a low efficiency index stamps a system as inefficient. There may be local conditions in the form of city by-laws, topography, or traffic characteristics which influence the operation of the cars. The speed factor is especially susceptible in these regards. But in a broad and general way the use of the efficiency index is a simple yet most effective means of measuring the service rendered for the riding public by a street railway system.

Truck Replaces Supply Car

THE New York State Railways recently remodeled a 2-ton White truck, purchased in 1917, for use as a supply truck. As will be observed in the accompanying illustration, a frame built up of bar steel has been bolted to the body just behind the driver's compartment and is held vertically by two bars, one on each side, extending to the car chassis. An I-beam is hinged to the supporting frame, thus allowing heavy pieces of material and equipment to be picked up from the ground beside

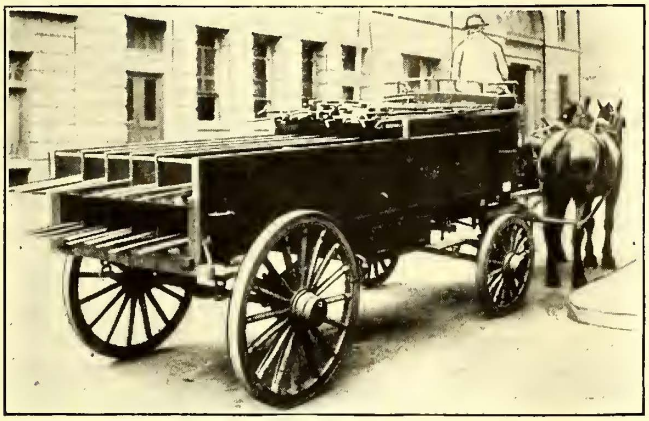


REMODELED TRUCK FOR HANDLING SUPPLIES

the truck and loaded by means of the chain hoist. This supply truck replaces a double-truck, two-man-operated supply car. The substitution of this means for transporting supplies has cut the cost of distributing materials and collecting scrap about 40 per cent.

The New York State Railways already has a simple and effective plan for dispatching trucks and work trains, so that the adaptation of an auto truck for the purpose previously mentioned involved no changes in the general system of distributing supplies. This well-worked-out method of recording truck and work train movements was the subject of a paper in the issue of this paper for Jan. 5, 1918.

The American Institute of Electrical Engineers has submitted its standards (1921 edition) to the American Engineering Standards Committee for approval as an American standard. The standards submitted represent the latest revision of the A. I. E. E. standardization rules, revised during 1919 and 1920.



THE ABANDONED HORSE-DRAWN VEHICLE

THIS TRAILMOBILE IS USED TO CARRY HOSE BRIDGES

Hose Bridges Carried in Trailer

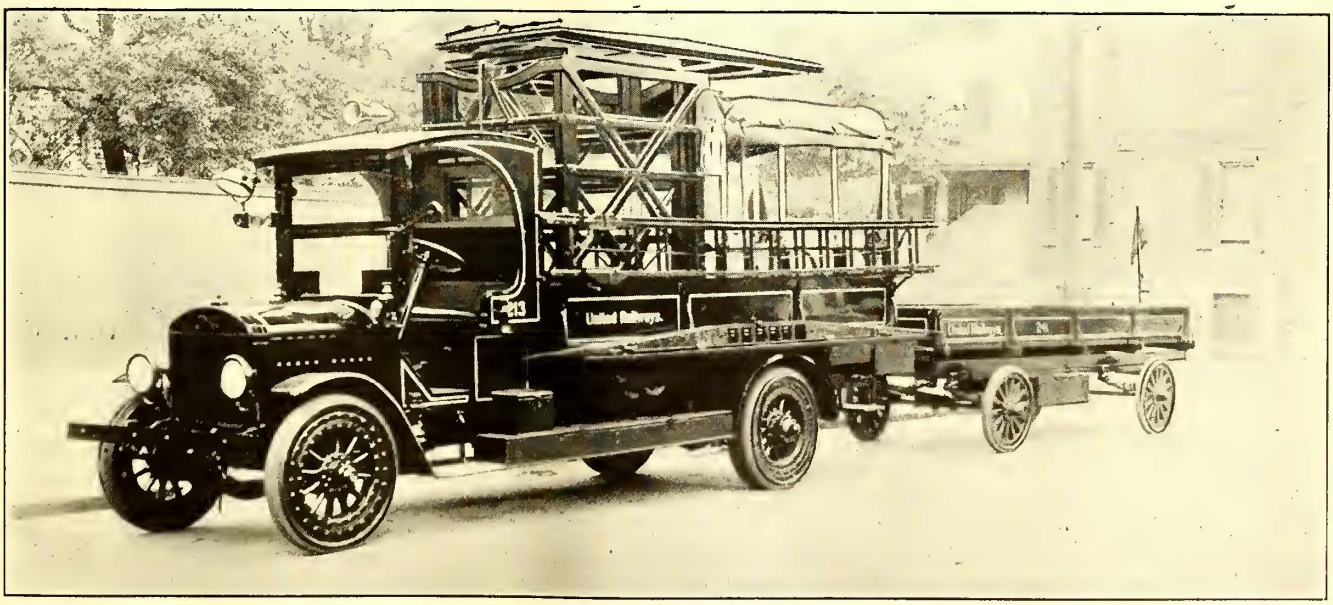
By Substituting a Trailmobile for a Horse-Drawn Vehicle The Baltimore Property Is Saving More Than $1,000 a Year

BY ADRIAN HUGHES, JR.
Superintendent of Power United Railways & Electric Company of Baltimore

THE employment of trailers in connection with broadening the fields of usefulness of motor trucks for many and divers purposes has for so long been the rule rather than the exception that it is difficult to find a new adaptation which would in itself be unique. It is probable, however, that all the possibilities of the trailer have not yet been exhausted or fully appreciated by many motor vehicle users.

The United Railways & Electric Company of Baltimore, for instance, has recently put in service a trailer for the purpose which it might be possible to term a new and unique application of this very useful motor vehicle appendage. The company was faced with the problem of replacing the heavy horse-drawn wagon in the trouble department for carrying hose bridges which are used to bridge over lines of fire hose to prevent blockades of traffic in the vicinity of a fire. All other horse-drawn trouble department equipment had been replaced with motor vehicles, and it was very undesirable and uneconomical to have to maintain two horses in the main trouble station merely for the occasional requirement of hose bridges, but the large investment and subsequent maintenance charges necessary for a motor truck to serve the purpose could not be justified, since the unit would be standing idle most of the time, inasmuch as fires requiring use of hose bridges are rather infrequent. Nevertheless it was absolutely essential to eliminate the horses and yet have a vehicle which would always be immediately available solely for the purpose of carrying the hose jumpers.

The answer of course was the trailer and, after the problem was carefully investigated, a 1½-ton "trailmobile" chassis was purchased and a body designed and built, having suitable compartments for the hose bridges, the spreaders, lanterns and other accessories. Each of the seven trouble trucks in the department is equipped with couplers so that the trailer may be attached to any of them when the hose bridges are needed. The draw-bar of the trailer is so arranged that it steers the front wheels, causing the trailer to follow around turns in the tracks of the motor truck and thereby making it unnecessary for the driver to use extraordinary precautions in maneuvering. In fact, the driver can practically ignore the presence of the trailer in all operations except backing. The difference in size of the two vehicles, as shown by the illustrations, is very interesting. The abandoned horse-drawn wagon carried ten sets of hose bridges and



THE EMERGENCY MOTOR TRUCK CARRIES TWO HOSE BRIDGES AND THE TRAILER CARRIES EIGHT

the trailer carries eight sets. Each trouble truck is also equipped to carry two sets of hose bridges.

The results obtained have been very satisfactory. The bridges may now be transported when required with much greater dispatch than was formerly attainable with the heavier and slower horse-drawn wagon. Moreover, it is expected that the maintenance charges for the trailer will be practically negligible, especially as concerns the usually most costly item encountered in maintaining trucks, namely, the rubber tires, which, in the case of the trailer, are not subjected to tractive effort and therefore escape the severe wear that is naturally inherent with all forms of motor-driven vehicles. Furthermore, the substitution of the more modern method for carrying the hose bridges has released considerable valuable space formerly required for the horses and wagon at the Lombard Street trouble station, and the space is now available for more important purposes. The appreciable economy effected by the elimination of the horses for the comparatively infrequent service required is almost too apparent to warrant comment.

However, the following figures will indicate approximately the amount of the annual saving on the basis of an investment of $1,600 for the horse-drawn wagon and two horses and $1,200 for the trailer:

	Horses and Wagon	Trailer
Investment	$1,600	$1,200
Annual fixed costs at 12 per cent	192	144
Annual operating and maintenance costs	1,140	150
Total annual costs	$1,332	$294
Saving		$1,038

Thus a much more satisfactory and efficient vehicle has been provided to replace the horse-drawn vehicle, at about one-fourth the investment necessary for a motor vehicle, and at a saving sufficient to pay for the trailer in fourteen months.

There are many other purposes for which trailers could be used in electric railway work for carrying equipment which is not in constant use, such as devices for reeling and rereeling feeder and trolley wire, as well as derricks, gin poles and concrete mixers for use in connection with installation of poles, etc.

Case Hardening—Core and Case

THERE seems to be a great difference of opinion in regard to the question of which is more important, the case or the core in case hardening steel material.

In the case-hardened steel the seller usually dwells on the properties of the core, while the user seems to consider the case of more importance and the essential part. Dr. Aitchison, in a recent lecture, stated that both are of equal importance in the manufacture of case-hardened parts. The case should be hard but should also be tough, because to withstand abrasion or blows a material does not need to be intrinsically hard, but it must be durable and have a high value of yield point. The best test of the qualities of a case is the use of microscopic inspection to note the quality of free cementite, which tends to produce a brittle case. The core has a definite function to perform, it should be tough and should possess great strength because in manufacture of transportation equipment parts, lightness is an essential requirement. If the fracture appears to be gray and fibrous the article is regarded as sufficiently tough.

A Community Freight Service

Kansas City Railways Builds Local Freight Service and Interstate Commerce Commission Grants Terminal Rates to Patrons—Railway Now Has a Prospect of Making a Profit

AFTER operating a terminal freight line with electric locomotive for fourteen years under serious handicaps as to rates, the Kansas City Railways Company has been granted a readjustment under which both the railways company and the consignees will be able to proceed more profitably. Patience and persistence have won, and the railways company, which has doggedly continued its service because the service was needed, finds itself now in position to enter the period of radically increasing volume with a prospect of profit in this service. The readjustment consisted in the application by the Interstate Commerce Commission of the Kansas City, Mo., freight rates to Westport, Mo.

Westport is the title of a suburban community well within the city limits of Kansas City, Mo., served as to freight carriage by an electric line of the Kansas City Railways, cars being received by this company from the Missouri Pacific, the Frisco and the Kansas City Southern at Dodson, 8 miles south of the Westport station. Westport is the original settlement of Kansas City, Mo. It is on high ground 5 miles south of the Missouri river landing of those ancient days. In the old days a steam road with dummy engine equipment filled in a service to the Westport district, having its connections with the steam roads at Dodson and taking cars from the trains before these trains reached the union terminals. There has been no facility for transferring freight cars from the terminals to the Westport district otherwise than at Dodson.

In 1907 the Kansas City Railways (then the Metropolitan Street Railway) took over the dummy line and electrified it, maintaining and improving the freight terminals and incorporating the rail line with its passenger-carrying electric system. Passenger and freight cars use the same tracks for the 8 miles from Dodson to Westport, diverging at the edge of the terminal yards.

The company has, during the past year, been handling about fifteen freight cars a day over this line. This is considered an abnormally low level of business, and the average is expected to increase as business conditions improve.

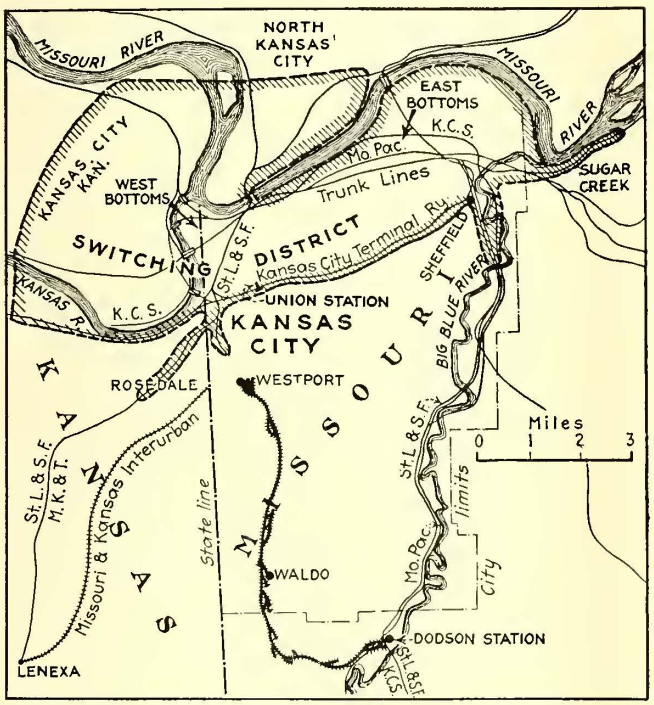
The Country Club passenger line, with double-truck cars, has a three-minute headway in rush hours of morning and evening, during which periods freight cars are not run. The shortest headway throughout most of the day, excepting rush hours, is four minutes, and operation of the freight trains occurs even in the four-minute headway period. The only problem is one of power, the operation of freight trains interfering with schedules when passenger cars are under three-minute headway. The Country Club line is operated between Forty-third Street (Westport) and Sixty-third Street only. Between Sixty-third Street and Dodson, the southern terminus, passenger service is with one double-truck car making the round trip on thirty-minute schedule.

The convenience, even the necessity, of a freight terminal at Westport has been more and more emphasized every year. Within 2 miles of the Dodson line were the areas most rapidly developing as residence districts—one of these sections being nationally famous as the "Country Club District." Materials for residence

construction and supplies, except for this freight line, would have to be hauled 5 to 10 miles up grade, sometimes even farther. The time element alone warranted attention to the Westport facilities, as every year was showing worse delays in passage of freight through the Kansas City terminals.

Through all these years, however, freight service into Westport over this line has been hampered by the rates. Dodson, 10 miles south of the Union Station at Kansas City, took the Kansas City rate on commodities from the south, and the local rate from Dodson to Westport was added for shipments into Westport.

For several years the Kansas City Railways received only a switching charge of $8 for handling the cars from Dodson to terminals. This was collected by the railways



MAP SHOWING "DODSON LINE," WHICH IS THE BASIS OF AN INTERESTING FREIGHT RATE DECISION BY THE INTERSTATE COMMERCE COMMISSION

company from the consignee, who then could collect $4 of it back from the line haul road. On December 5, 1920, the charge was increased to $15 per car, still collected from the consignee, who still was able to collect $4 from the line haul road.

The Westport consignee therefore paid the Kansas City rate plus the net $11 of switching charge Dodson to Westport. A consignee who received commodities at the Kansas City freight terminals paid only the Kansas City rate and no switching charge (the charge being absorbed by the line haul road); the Westport consignee was therefore at a disadvantage of $11 per car. But despite this disparity, the industries grouped along the Dodson line persisted, and the railways company, despite its unprofitable operation, continued to give the communities the freight service, both interests being convinced that eventually their rights and the justice of the situation would be recognized.

The Interstate Commerce Commission, after continued hearings, issued an order, effective May 2, 1921, relieving the burden from the consignee and providing an adequate compensation to the railways company for its service. Under this order the freight rate to Kansas City, Mo., applies to Westport, Mo., on lumber and many other commodities, from many southern districts, including practically all points in Arkansas, Oklahoma, Louisiana and Texas, on the Missouri, Pacific, Kansas City Couthern, Frisco and connecting lines. This removes the differential and places upon the line haul roads delivering the cars at Dodson the absorption of the charge necessary to complete the entire transportation of the shipment to Westport via the Kansas City Railways—the same as to any industry within the Kansas City switching district.

The consignee, because of this readjustment, finds himself on a par as to charges with others of his industry in Kansas City and with a great advantage in the convenience of the delivery. The Dodson-Westport consignee finds his shipments close to his hand, the topography and conditions of the area permitting easy extension of tracks to yards or factories. These shipments avoid the occasional congestion and the regular delaying routine of the Kansas City switching district. It is estimated that by the changes just described from one day to a week are being saved by the consignee.

Removal of Glue Stains

CASEIN and vegetable glues containing caustic soda produce stains on certain kinds of wood, notably the oaks, maple, cherry, elm, ash, birch and beech. Some glues stain the wood more than others, and those that contain the most alkali are likely to be most injurious. The staining is due to the action of the alkali in the glue on the tannins and other constituents of the wood, whereby a substance related to ink is formed. No means have yet been found of preventing this chemical action. Precautions can be taken, however, the Forest Products Laboratory, Madison, Wis., believes, which will keep the discoloration from the finished surfaces.

Most trouble experienced with glue stain in woodworking is caused by the penetration of the glue solution through thin face veneers. This seepage is very likely to occur if the veneer is less than 0.05 in. thick and somewhat porous. The consistency of a glue in part determines whether it will be squeezed through the wood or not. It is quite obvious that under similar conditions a thin glue will penetrate farther than a thick glue. For this reason the quantity of water that is added to a glue might be diminished and "fillers" added when staining is feared. The amount of pressure exerted by the panels in the press is also a factor, but it would not be advisable to reduce the pressure in order to check the flow of the glue.

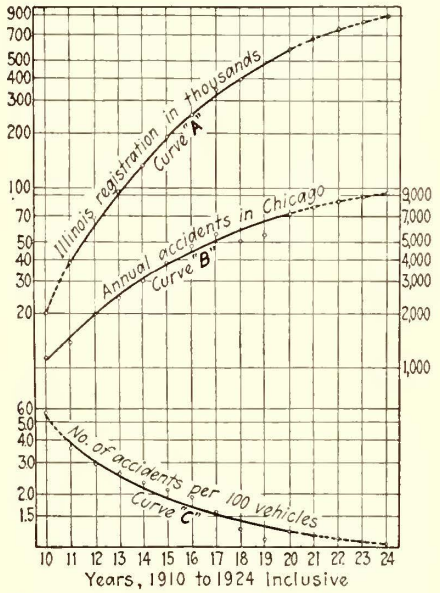
If a panel is dried promptly, the caustic soda solution will have difficulty in coming to the surface. Rapid drying can be brought about by removing the panels from the press as soon as it is safe to do so, and placing them on stickers. The amount of staining can also be decreased somewhat by placing a caul or some other flat object between adjacent panels in the press.

Casein and vegetable glue stains can be almost entirely removed by sponging the stained surface with an oxalic acid solution, prepared by dissolving 1 oz. of oxalic acid crystals in about 12 oz. of water. Still better results may sometimes be obtained by moistening the wood first with a sodium sulphite solution made up in the same concentration as the oxalic acid. In this way very stubborn stains can be almost obliterated.

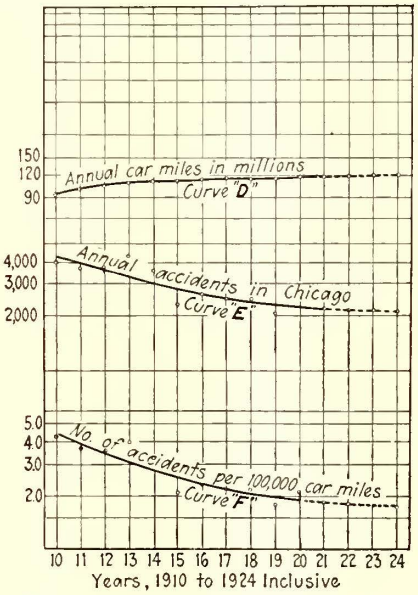
Accident Record Shows Improvement

A Study Made in Illinois Reveals That Safety-First Work Is Bearing Fruit—Greater Efficiency by Chauffeurs and Motormen Urged, Also Better Accident Record System

A MEASURE of cheer in the growing accident problems involving street cars and automobiles was brought out in a study of accident data in Chicago recently by R. F. Kelker Jr., engineer, Chicago. The results of this study are presented herewith in graphical form, from which it is seen that while the number of automobile accidents is greatly increasing, the number of street accidents per 100 motor vehicles is showing a very healthy decrease. Similarly, the number of accidents per 100,000 car-miles operated by the Chicago Surface Lines has shown a good decrease in the last ten years. As it was impossible to secure the number of automobiles used in Chicago alone, it was necessary to make use of the registration figures for the entire State of Illinois in making this comparison. From these curves it is seen that while the number of annual accidents reported by the Chicago police for automobiles increased from 1,130 in 1910 to 7,110 in 1920, the reported motor vehicle accidents per 100 registered vehicles decreased from 5.65 to 1.24, or a decrease in the ratio of 22 per cent. In 1910 the Chicago Surface Lines operated 92,809,508 car-miles and suffered a total of 3,969 accidents as reported by the Chicago police. In 1920 the number of car-miles operated was 117,118,072 and the number of accidents, 2,477, or a reduction in the ratio from 4.27 accidents per 100,000 car-miles in 1910 to 2.11 in 1920, or 50 per cent.



TREND OF ACCIDENTS TO MOTOR VEHICLES IN CHICAGO STREETS



TREND OF ACCIDENTS INVOLVING STREET CARS IN CHICAGO

These curves were plotted on logarithmic paper simply as a means of making them more compact. The purpose of the curve is mainly to show the trend and this is as well portrayed in a small space on this kind of paper as it is in a much larger space on regular co-ordinate paper.

Mr. Kelker attributed the improvement in connection with automobile accidents to the betterment in the mechanical design of the automobiles, to the greater skill on the part of drivers and to the increased alertness of pedestrians and drivers of horse-drawn vehicles. It is his view that the best means for securing a further reduction in these ratios is to raise the average of skill of motor drivers through the prompt prosecution of those drivers who by carelessness violate the law.

Mr. Kelker believes that the improvement shown in the number of accidents involving street cars is due to the greater alertness of pedestrians and patrons of the cars, to the replacement of horse-drawn vehicles by motor vehicles and the consequent improvement in uniformity of speed of all vehicles using the streets, and to better training and discipline of motormen. His view is that further reduction of this ratio can be secured only by special study to determine the location of dangerous places on the various lines, and by using accident data to forecast the probability of accidents so that the causes may be guarded against or eliminated.

Recommendations for Accident Prevention

Mr. Kelker has for many years been closely connected with street railway operations in Chicago. He is of the opinion that the system of keeping accident records, outlined below, will greatly facilitate the study of accident conditions and therefore tend to reduce the number of accidents. In the main, two things are sought in the plan proposed: First so to visualize the accidents taking place to the man responsible that repeated accidents at any location will promptly be noted; and second, to make readily accessible the data on any class of accidents on any line.

To accomplish these things it is suggested that a large scale map of the car lines (about 3 in. to the mile) mounted on a soft pine board, be used for locating with colored pins the various accidents. The map should be divided into sections to show the various operating divisions and then subdivided on a co-ordinate system for purposes of reference and for use in filing reports. All accidents would be grouped according to class and colors assigned as follows:

Group Letter	Description	Color
A	Alighting and boarding	Green
B	Collision with vehicles	Red
C	Struck by cars	White
D	Operating defects	Blue
E	Collision with cars	Yellow
M	All other accidents	Orange

When an accident is reported, a pin of the proper color would be stuck in the map in the proper co-ordinate section. Besides the pins mentioned, which would have solid colors, there would be other pins with a black dot on the head to indicate accidents at any street intersection, the solid colors being used for those occurring at all other places.

Then the accident reports or the memoranda on any accident would carry the name of the line, the co-ordinates of the location on the map, and the group letter to determine the proper filing place. Thus the key for file of any record would be something like this: "Madison H4 B," Madison being the name of the line, H4 the map co-ordinates, and B the class of accident. All accident records would be filed first by line, then subdivided by location and further subdivided by class of accident. By this scheme the data for a study of a certain class of accidents on one line or for the whole system could be readily produced. It should be understood that in this scheme it is accidents and not claims that are being filed, for the latter would only encumber the file and be of little value in any study of the situation to reduce the number of accidents.

New Processes for Treating Coal

Dirty Coal an Economic Waste—High Cost of Coal Makes Processes Possible—Flotation and Gravity Utilized in Treatments—Oil Used as a Reagent in New Trent Process

WAR conditions forced every power producer to use any and all kinds of coal that he could get. But these same conditions caused a closer study of the economies of power production and plant operation to counteract rising costs of all sorts. It was soon generally recognized that it is a waste to have transportation facilities used to transport fuel that is dirty and high in ash content; to put dirty or high ash coal under boilers; and to fight clinkers and transport ash cars. But one good result of an economic situation of this character is that it usually produces remedies.

In the coal situation the first remedy was to wash out the dirt. This can be done very rapidly if the coal is large size but is difficult to accomplish with slack coal. One new process for treating coal, recently developed in Belgium, is called the Rheolaveur process, and is described by R. Nelson in the *Electrician* for July 8, 1921. A strong and steady flow of water forces the coal along a trough and the coal shale and dirt separate by stratification, the rate of flow and length of trough being made suitable for complete stratification. The dirt is drawn off at intervals through the insertion of cast-iron boxes which are equipped with hand valves for controlling an upward flow of water which prevents the coal coming off with the dirt. At the end of the trough the clean coal is delivered to hoppers. In washing nut coal only two boxes are necessary, the first to draw off most of the shale and the second to draw off the rest of the shale and some coal which is later reclaimed by rewashing. In washing small coal, four boxes and two troughs are necessary. The process claims low initial cost, low maintenance cost, easy control, simplicity of operating parts and economy of space.

Flotation Process

In the treatment of fine or slack coal, the newer processes use an adaptation of methods developed in the ore industry. One of these described by Mr. Nelson is independent of gravity. The coal to be treated is ground until it all passes a $\frac{1}{10}$-in. mesh screen. The coal is then mixed with three or four times its weight of water and a small quantity, 1 lb. per ton of coal, of some reagent such as oil or a coal tar product. The mixture is then agitated by a power mixer to produce a multitude of air bubbles. The coal attaches itself to these bubbles and floats to the top in the form of a thick layer of froth. The dirt and ash-forming material sinks to the bottom and is drawn off and rejected. Scrapers remove the froth and the coal is then dried.

The machine consists of from five to ten "mixing" boxes, each with a "froth" box. The material passes from mixer No. 1 to froth No. 1, to mixer No. 2 to froth No. 2, etc. A machine capable of dealing with 1,000 tons of coal a day is about 37 ft. x 16 ft. x 15 ft. in size. In a typical separation of Derbyshire slack the process reduced the ash from 29.5 per cent in the cinder fuel to 9.86 per cent in the cleaned coal.

Use of Oil as Reagent

The latest development in coal cleaning was brought about by the co-operation of the Bureau of Mines and the Trent Process Corporation of Washington, D. C., and is described in *Coal Age*, July 28, 1921. A mixture of pulverized coal and water is stirred with oil whose weight is about 30 per cent the weight of the fuel. Due to this agitation the coal particles form a pasty amalgam with the drops of oil which is heavier than water and sinks; the ash and non-combustible materials which have been separated by the pulverizing, remain in suspension in the water, are not affected by the oil, and may be drawn off. The coal amalgam is then treated to remove the water and then used as fuel either wet or in dry briquets. This process is new and is apparently very efficient for bituminous coals but has not as yet been developed on a commercial scale.

The Situation in the Petroleum Industry

THE rate of growth in the petroleum industry in recent years and the prospects for further development are matters of special concern at present, says the *Wall Street Journal*, so prominent is the position which the industry has attained in world affairs. Figures obtained from the United States Geological Survey on production in the United States, as well as in the world, throw much light on the general question and are especially pertinent to the question of generating electric power by oil. The figures for the year 1920 indicate that the production of crude oil in the United States was about 443,000,000 bbl., or about 65 per cent of the world's production, while the consumption in this country was over 530,000,000 bbl.

Dr. David White of the Geological Survey, in an official publication, says that by unexpected good fortune in the search of new supplies, or even less unexpected curtailment of consumption, the petroleum production of the United States is likely not only never again wholly to meet our requirements, but even is liable to start soon on the long decline to waning output. He also mentions a dangerous growth of consumption demand, such as motor cars, the use of oil under steam boilers, the turning from coal to oil, produced by the coal strike, and the program of the Shipping Board.

Speaking about the effect of the industrial slump on the petroleum industry, A. W. Ambrose, chief petroleum technologist of the Bureau of Mines, says that he thinks the petroleum industry will recover far more rapidly than many other commodities. The increased consumption of gasoline, accounted for by the enormous growth of the automotive industry, is back of the sustaining of the petroleum industry. The oil industry today is living on its gasoline sales and nothing else. He declares that as soon as the economic depression is relieved the petroleum industry will be one of the first to benefit and demands for petroleum will advance rapidly and go beyond war-time consumption.

The real motor-fuel problem is not concerned with the swings of the business pendulum, although the present abundance of fuel is pointed to by superficial critics as showing how wrong have been the predictions of of those who have warned us of a future shortage. At present the underground petroleum reserve in the United States is only about 5,800,000,000 bbl. Were this oil to be extracted from the ground at a rate equal to that of the year 1920, a feat that is not out of the question from a practical standpoint, the reserve would last but thirteen years. It is thus evident that after a few years we must expect a decline in the domestic production of petroleum.

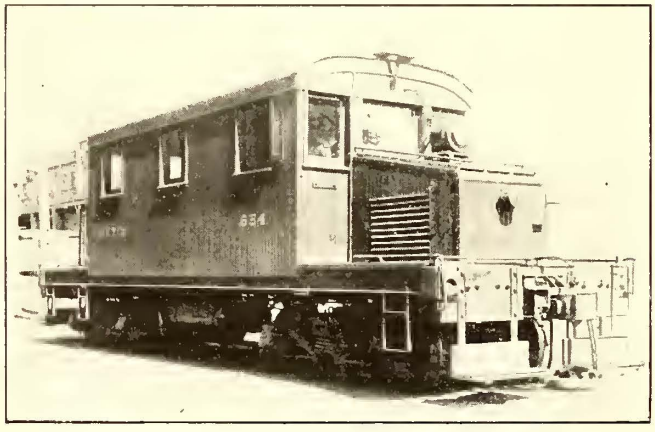
Equipment and Its Maintenance

Short Descriptions and Details of New Apparatus of Interest to the Industry. Mechanical and Electrical Practices of All Departments

Operating Company Builds Switching Locomotive

A 45-Ton Switching Locomotive Constructed in the Shops of the Monongahela Power & Railway Company Was Built from a Discarded Ruined Freight Car

A CONTRACT between the Baltimore & Ohio Railroad and the Monongahela Power & Railway Company provides for the switching over the tracks of the latter company of freight in carload lots from the yards of the Monongahela division to the tracks of the Little Kanawha Railroad, controlled by the Baltimore & Ohio Railroad, and to industries in South Parkersburg. This switching service increased at such a rapid rate that in 1920 the Monongahela Power & Railway Company found itself without adequate motive power to handle the carloads of freight offered for delivery. The purchase of a new and heavier electric locomotive was necessary, and accordingly inquiries were sent to the principal electric companies for a 40



LOCOMOTIVE CONSTRUCTED FROM OLD EQUIPMENT

to 45-ton electric locomotive arranged for 600-volt direct-current operation. The bids received were so unsatisfactory that the company decided to construct a locomotive in its own shops.

The locomotive, as shown in an accompanying illustration, was built along lines of a standard steeple cab-type locomotive. A standard steel box-car center with steel bolsters riveted in place with wing gusset plates was used. This frame was purchased on a pound basis from a discarded and ruined freight car equipment and results have shown that it possesses the required stiffness, strength and other essentials.

The longitudinal sills of the engine body consist of six 7-in., 90-lb., T-rails, spaced three on each side of the steel center, and an insert of concrete, filled with scrap iron, was placed between these sills to give added weight to the locomotive. The floor of the locomotive is therefore a somewhat massive construction, but it has the weight and bulk necessary to furnish tractive power to the engine.

The trucks used were formerly standard freight trucks of the arch-bar type. The original arch bars were replaced with longer bars, so as to lengthen the wheelbase and provide space necessary for hanging brakes and motors. Cast-iron wheels of M. C. B. standard design of wheel, flange and tread were used. The electrical equipment consists of four G. E. No. 73 motors with a gear ratio of 17:73. These motors were carefully constructed with new commutators and some other additional repairs were made which were found necessary. Two controllers, type K-34, equipped with G-2 auxiliary ratchet switches, control the current in the power circuit.

The air brake equipment consists of two A-6 air compressors, each of 18-cu.ft. capacity, which work in unison to provide the air supply. The compressors are located one under each hood, while all the additional air-brake equipment except the brake cylinder and main reservoirs are located inside the cab. The brakes are Westinghouse type A.M.M. with M-22-A brake valves and M-1 triple valves. The locomotive is provided with air sanders which deliver sand to the front wheels of each truck. The general dimensions of the locomotive as constructed are:

Length	34 ft. 8 in.
Width	9 ft.
Height, rail to running board	12 ft. 4 in.
Wheelbase	6 ft. 10 in.
Trucks, center to center	20 ft. 8 in.
Axles	5½ in.
Journals	5 in. x 9 in.
Brake cylinder	12 in. x 12 in.

This locomotive as constructed is giving very satisfactory service and the entire cost was but $8,385.71. It is in constant service and handles from six to twelve freight cars.

New Oil Circuit Breaker

AS AN ADDED economy in space for equipment of power houses and substations, the Condit Electrical Manufacturing Company has placed on the market the type D-17 oil circuit breaker with a relatively high interrupting capacity but of comparatively small overall dimensions.

A heavy and rugged frame construction is used throughout, with double tanks, supported by a heavily ribbed cradle, which in turn is hung by strong bolt construction with resilient features. The purpose of this type of construction is to absorb the mechanical shock incident to rupturing a heavy short circuit, and to reduce to a minimum the hazard which usually follows the throwing of hot oil and gases emitted on heavy short circuits. Double tanks as furnished on the type D-17 oil circuit breaker take care of this hazard. The inner tank contains the oil in which the switch

contacts are immersed and is heavily reinforced at the top by a deep web on the frame. The outer tank in connection with the resilient features is so arranged as to chill the gases and to prevent the hot oil from being discharged from the breaker.

Type D-17 oil circuit breakers are built in single units for 500 to 1,200 amp. capacity at 15,000 volts and 500 to 800-amp. capacity at 25,000 volts, single throw, and can be furnished for single or multiple operation.

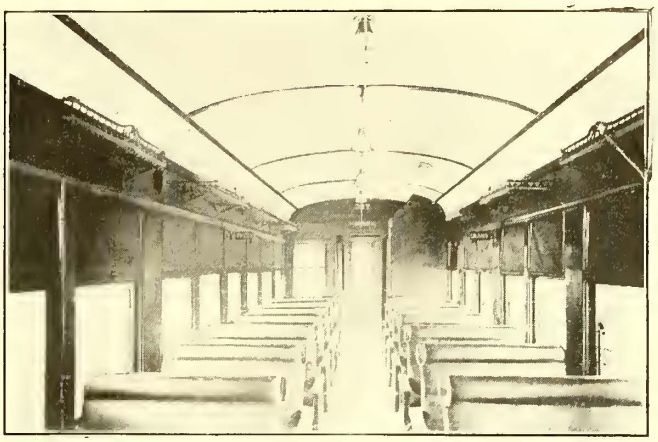
New Cars for Texas Electric Railway

Four Interurban Cars Arranged for Operation on Both 600 and 1,200 Volts Placed in Service—Equipment and Car Construction Provide for Hauling Two Trailers

THE Texas Electric Railway, operating 277 miles of line between the cities of Dallas, Waco, Dension and Corsicana, recently placed in service four new interurban passenger cars. The car bodies were built by the St. Louis Car Company and the trucks by the J. G. Brill Company. The cars are equipped with four GE-225-B motors and PC-101-B control, arranged for operation on 600 and 1,200 volts. Air brakes are Westinghouse AMM type, with 12-in. x 14-in. brake cylinders. The air compressor is of the General Electric Type CP-78-B1, arranged for operation on 600 and 1,200 volts.

Current for operating the control apparatus and supplying the lights is furnished by a 32-volt, 1.5-kw. motor-generator with compound winding, which permits its operating on either 600 or 1,200 volts. Two General Electric J-37 headlights with 250-watt, 32-volt special bulbs are used. The interior of the car is lighted by eight 50-watt, 32-volt lamps with Holophane reflectors.

The cars have steel underframing and steel superstructure and as they were specified for service at 65 miles per hour, pulling two trailers, the underframe was constructed with six longitudinal sills, four of which are continuous from bumper to bumper. The side sills are 8-in., 13.75-lb. channels; center sills, 8 in., 18-lb. I-beams; intermediate sills, 8-in., 11.25-lb. channel and bumpers, 8-in.; 13.75-lb. channels bent

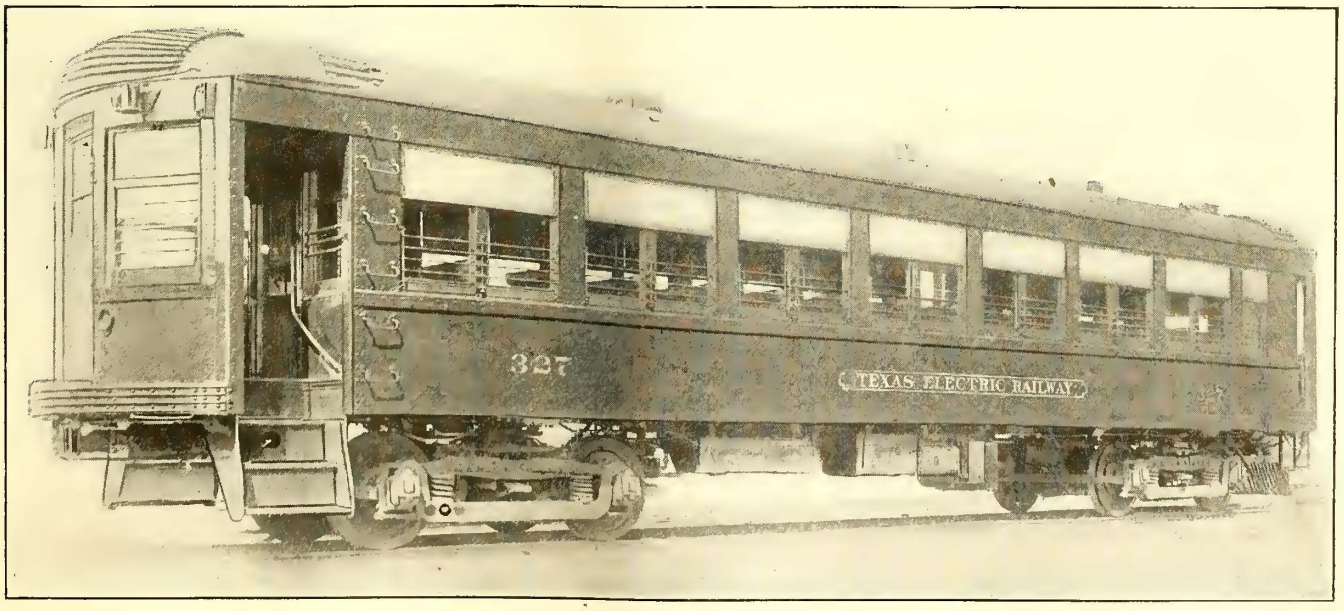


INTERIOR OF NEW INTERURBAN CARS FOR TEXAS ELECTRIC RAILWAY

to radius and reinforced with four ribbed Hedley anticlimbers. The bolsters are 12-in. x 1-in. soft steel. The side pier posts are $2\frac{1}{2}$-in. x 2-in. angles; side window posts, 2 in. x 2 in.; tees and vestibule corner and end posts, $3\frac{1}{2}$-in. x $3\frac{1}{2}$-in. The side sheets and letter board are of $\frac{1}{8}$-in. patent beveled plates, insulated with pressed cork board.

The roof carlines are $\frac{1}{2}$-in. x 2-in. soft steel, to which is applied suitable furring for nailing the $\frac{5}{8}$-in. poplar roof, which is covered with No. 8 canvas duck. The sash and doors are made of quarter sawed oak and the floors of hard maple, with the exception of the toilet room, which is covered with Mastic flooring. The front and rear window sash and lower side sash are glazed with $\frac{3}{16}$-in. plate glass. The upper Gothic sash are glazed with Imperial prismatic glass of special design. Trucks are the Brill 27-MCB-3X type with 5-in. x 9-in. journals, 6-in. axle bearings, forged side frames and 37-in. rolled steel wheels.

The enamel system was used in painting and the cars are finished in Pullman green body color with white enameled ceiling. The interior finish of the car is dark oak. The signal system, supplied by the Ohio Brass Company, is arranged automatically to cut in the storage battery lights upon any failure of line voltage. The accumulator is arranged for constant



EXTERIOR OF TEXAS ELECTRIC RAILWAY CARS

recharge at 600 volts when the car is operating on either 600 or 1,200 volts. The seats, supplied by Heywood Brothers & Wakefield, are upholstered in Fabrikoid and built to the railway company's specifications. The trap doors and sash fixtures were furnished by the O. M. Edwards Company, couplers and trolley catchers by the Ohio Brass Company and the heater equipment by the Holden & White Company.

The principal dimensions of these cars are:

Length over bumpers	55 ft. 11 in.
Length over vestibule sheeting	53 ft. 11 in.
Width over side sheets	9 ft.
Length of smoking compartment	17 ft. 6 in.
Length of main compartment	21 ft.
Seating capacity, main compartment	38
Seating capacity, smoking compartment	22
Weight, completely equipped	86,600 lb.

Titanium-Treated Rails

Service Tests of Titanium-Treated Rails Extending Over Six Years Confirm Earlier Test Results—Thirty-seven Failures per 100 Track-Miles During This Period

THE result of an extended series of investigations begun in 1913 to determine the effect of the use of titanium in rail steel has been published in bulletin form by the Titanium Alloy Manufacturing Company, Niagara Falls, N. Y. In the eight bulletins of the series which have been issued previously there appeared the result of metallographic and physical testing work which demonstrated the clearness and uniformity of titanium-treated rail steel and the physical superiority of this more uniform steel. The service results, which have now been added, prove conclusively that the evidence brought out earlier is reliable and that a uniformly good steel will make possible greatly improved rails.

Reasons for the Investigation

The purpose of these investigations was:

1. To show in detail the exact structural and physical differences between titanium-treated and untreated rails.

2. To find a simple, practical method for determining the efficiency of titanium treatment so that occasional improperly treated steel may be identified and separated from that free from excessive segregation.

3. To follow through the many thousand tons of titanium-treated rail which have been in service from four to six years.

The control of segregaton in open-hearth rail steel has always been a matter of great concern to the rail makers. During the years 1913 and 1914 samples of A-rails (top rail of the ingot) from 111 different heats of standard and 101 heats of titanium-treated open-hearth steel, made for six different railroads, were forwarded to the laboratories of the Titanium Alloy Manufacturing Company. Here the Pennsylvania Railroad segregation specification was applied to each of the A-rail samples from the 212 heats. A-rails from only 37 per cent of the heats of standard open-hearth steel passed the requirements, whereas A-rails from 93 per cent of titanium-treated heats passed the specification.

The determination in steel of titanium insoluble in hydrochloric acid is an index of the efficiency of the treatment and allows the identification of heats in which excessive segregation has occurred. The process is very simple and can be made quickly and accurately. This determination will ordinarily make further analytical work unnecessary because so high a percentage of titanium-treated rail steel will meet the required specifications for segregation. It has been suggested that in order to conform to regular mill practice all rails that pass the usual physical requirements be accepted by the purchaser. Samples for titanium determination should be taken by the inspector for the purchaser and sent to the laboratories or those of any agency it might employ.

The adoption of this simplified method should accomplish the following results: (1) Eliminate the majority of rail failures; (2) assure the purchaser of rails of more uniform steel throughout all the ingots of a heat; (3) permit a larger yield of acceptable rail by eliminating serious segregation in the upper portion of the ingots; (4) since segregation can be effectively controlled, make it desirable to raise the carbon content of the steel slightly, which would result in better wearing steel.

Titanium-Treated Steel Has Least Failures

A comparative test over six years in service seems to indicate that the titanium-treated steel has the least failures. In 1913 the Chicago & Alton Railroad obtained and laid in tracks 14,310 tons of standard 90-lb. A. R. E. A. open-hearth rail steel from four different mills and 6,000 tons of titanium-treated open hearth of the same weight and section. This tonnage was laid so that the service for all rail was approximately the same. Of the standard open-hearth steel there occurred 116 failures in the 101 miles of track, or 114 failures per 100 track-miles. On the other hand, the titanium-treated open-hearth steel showed an average of but sixteen failures in 42 miles of track, or thirty-seven failures per 100 track-miles.

Similar analyses of the rail failure statistics of the American Railway Engineering Association for 1918 showed average failures per year in service per hundred miles of track to be 13.7 for standard open-hearth rails as compared with 6.8 for titanium-treated open-hearth rails. Similar figures from the rail failure statistics contained in the report for 1919 show 14.6 and 4.9 failures respectively.

Attention is also called to the fact that the yield from standard open-hearth steel was 19.6 per cent less than that from titanium-treated steel, due to the greater freedom from segregation in the upper part of the ingots of the latter.

The war caused a great increase in the knowledge and use of alloy steels and these data should result in some great improvements in the quality of the steel rails and special track work used in the railway industry.

Fin Nut Lock

AN INGENIOUS form of nut lock is being used on nuts of the third rail shoes used by the Interborough Rapid Transit Company and the Brooklyn Rapid Transit Company in New York, as well as at other places where a very tight lock is desired. The nut lock is made of annealed steel and consists of a disk or washer with inwardly projecting fins bent up so as to be of cone form. After this washer is screwed on the bolt, with the fins fitting into the thread, the lock is flattened out in its original form, jamming the fins into the thread of the bolt. The nut lock is removed by being cut off. This nut lock is manufactured by the Nutlock Corporation and is known as the Hold Tite Nut Lock.

Hold Tite Nut Lock

American Association News

Executive Committee Holds Important Meeting

Approves the Report of the Reorganization Committee with Some Modifications —Appoints J. W. Welsh to Secretaryship—Considers Convention Program

THE executive committee of the American Association held an important all-day meeting at association headquarters on Friday, Aug. 5. The morning session was devoted to a consideration of miscellaneous association matters of importance, and the afternoon session to a consideration of the report of the special reorganization committee.

The first business of importance was the appointment of a permanent secretary to fill the vacany caused by E. B. Burritt's resignation. The reorganization committee had recommended that J. W. Welsh be appointed to that position and after a thorough discussion of the situation, the executive committee took unanimous action in line with this recommendation.

The following applications from companies for membership in the association that have been received since the 1920 convention were presented:

RAILWAY MEMBER COMPANIES WITHIN THE BORDERS OF THE NORTH AMERICAN CONTINENT

Brooklyn City Railroad Brooklyn, N. Y. ..... Joined June 11, 1921
Valdosta Street Railway, Valdosta, Ga. ..... Joined July 14, 1921
Sherbrooke Railway & Power Company, Montreal, Canada ..... Joined July 18, 1921

RAILWAY MEMBER COMPANY BEYOND THE BORDERS OF THE NORTH AMERICAN CONTINENT

Pernambuco Tramways, Light & Power Company, Pernambuco, Brazil, Joined March 2, 1921

RAILWAY MEMBER COMPANY REINSTATED SINCE THE 1920 CONVENTION

Chicago & Interurban Traction Company, Chicago, Ill. ..... Resigned July 11, 1921
This company resigned in letter of June 5, 1920. In letter of July 11, 1921, indicated that it wished reinstatement and asked for data sheet on which to compute dues owing, which are for the years 1920 and 1921.

MANUFACTURER MEMBER COMPANIES WHO HAVE JOINED SINCE 1920 CONVENTION

C-J-H Service Corporation, Buffalo, N. Y. ..... Joined October, 1920
William V. Dee Company, Bridgeport, Conn. ..... Joined Feb. 7, 1921
Kellogg Switchboard & Supply Company, Chicago, Ill. ..... Joined April 21, 1921
McKinnon Automatic Lubricating Vacuum Company, Holyoke, Mass. .. Joined October, 1921
Milwaukee Tank Works, New York, N. Y. ..... Joined Dec. 7, 1921
Republic Truck Sales Corporation, Chicago, Ill. ..... Joined July 15, 1921
Standard Oil Company, Chicago, Ill. ..... Joined June 30, 1921

The applications of all of the above companies were formally approved.

Resignations of a few railway companies and of some manufacturing companies were received. Most of these have not paid dues for the past one or two years. The secretary stated that an effort was being made to secure the continued membership of some of these companies.

It was suggested that when companies present their resignations without having made payments of dues in full to date of resignation, the secretary of the association should have the case of these unpaid dues taken up by counsel, and that those companies not making payment in full be dropped from the membership list.

President Gadsden made a statement to the executive committee with reference to W. O. Gibson and the final result of the analysis of the association's finances made by W. R. Boylan. Mr. Gadsden stated that Mr. Gibson had pled guilty in court on Thursday, Aug. 4, and would be sentenced on Wednesday, Aug. 10. He also presented a statement by Mr. Boylan.

With the defalcation matter closed in this manner anyone else is officially cleared from any criminal connection with the defalcation.

The executive committee considered the status of several committee reports, advising those committees as to policy in making their final and complete reports.

A complete discussion of the convention program as now proposed was next had. There was an evident desire on the part of the entire executive committee to put into force the suggestions made by President Gadsden at the Chicago conference that there be ample provision for discussion at annual conventions. The subjects committee was advised by the executive committee that it desired to have the program shortened and some suggestions along this line were made; that it desired to have authors of most of the papers limited to ten to fifteen minutes to present the high points or an abstract of their papers which would have been usually printed and distributed and that ample time be scheduled for discussion of the subjects presented. Provision is also to be made for one entire session which may be devoted to a consideration of the changes in the constitution and by-laws recommended by the executive committee following the report of the reorganization committee.

Reorganization Report Considered

The committee devoted the entire afternoon to a consideration of the report of the special reorganization committee. The principal points of this committee's report were outlined in the ELECTRIC RAILWAY JOURNAL for July 16, page 105. The executive committee adopted the report of the reorganization committee with some modifications, and will present an amended constitution and by-laws to the membership for action at the October convention. The report of the executive committee recommending these changes is now being printed, with the amended constitution and by-laws, and will be distributed to the membership at an early date.

The modifications which the executive committee made in the report of the reorganization committee follow:

A redefinition of the officers and membership of the executive committee as follows:

A president, to hold office for one year, eligible to re-election, *as recommended.*

Four vice-presidents, elected each year for a term of one year, designated first, second, third and fourth vice-president, eligible to re-election, *rather than to have two elected each year for two-year terms not eligible to re-election, and without designation, as recommended.*

Twelve members at large, six representing manufacturing companies, six representing operating companies, two of each to be elected each year for three-year terms, and not eligible to re-election to the same office, *as recommended.*

A treasurer, to hold office for one year, subject to re-election, *as recommended.*

The four presidents of the affiliated associations, *as recommended.*

All of the living past presidents, ex-officio members without power to vote; *rather than to have only the two junior living past-presidents, with power to vote, as recommended.*

The executive secretary, who is not a member of the executive committee, but who attends its meetings; he may not be the same person as the treasurer, *as recommended.*

A new provision that any elected member of the executive committee who is unable to attend a meeting of the executive committee may have the privilege of sending as a proxy any officer or employee of the same company member which that committee member represents. The further provision that if any elected member of the executive committee is absent and unrepresented by proxy for three consecutive meetings of the committee, his office shall automatically be vacant, is also added.

A modification of the definition of a quorum of the executive committee so that seven voting members are a quorum rather than a majority.

Provision that a majority of the finance committee and a majority of the policy committee rather than the full membership of both of them shall be chosen from the voting members of the executive committee.

The executive committee approved the suggestion of the reorganization committee that a special amendment be adopted at the 1921 convention which would not limit consideration of amendments to the exact wording presented by the executive committee, but that new and reworded amendments would be given official status on the floor of the convention in order that the most complete expression of the will of the membership of the association might be obtained.

The executive committee also approved the recommendations of the reorganization committee, given below:

That provision for membership of trackless transportation companies be made.

That a separate classification of membership be provided for consulting engineers, management and holding companies, investment bankers, etc.

That individual members from non-member companies eligible to election be not admitted.

That the executive committee hold regular monthly meetings.

That nominations for officers be made by a nominating committee and announced to the association at least thirty days before the annual meeting, but that other nominations may be offered any time before the actual election.

That definite provision be made for a mid-year meeting now held as a mid-year conference, but without any special provision.

That certain standing and continuing committees be provided by the by-laws.

That dues now stated in the by-laws shall be maximum, which may be lowered, but after once lowered not raised, by the executive committee.

That more careful provision be made with reference to members in arrears and members desiring to withdraw.

That *Aera* be continued as a magazine, with the secretary advised against unnecessary duplication.

That definite steps be taken with reference to better handling of the funds of the association.

All of the above are provided for in the amended constitution and by-laws.

With reference to the other recommendations made by the reorganization committee, the executive committee approved all of them.

The reorganization committee had made no recommendations with reference to the admission of municipally-owned railways, but asked the executive committee to consider it in its own meeting. The executive committee did so, but voted not to recommend to the membership that municipally owned railways be admitted to membership.

The reorganization committee had suggested, in response to questions raised by certain members, that the executive committee consider the advisability of incorporating the association. Meanwhile the reorganization committee had made further study of the matter and recommended to the executive committee that the association do not incorporate. The executive committee approved this latter recommendation.

In line with its recommendation that there be a definite by-law provision for nominations in advance of the convention, the executive committee authorized President Gadsden to appoint a nominating committee of seven immediately which would report nominations for the 1921 election as soon as possible.

Those present at the morning session were President P. H. Gadsden, Vice-Presidents R. I. Todd and C. D. Emmons; President W. G. Gove, Messrs. F. R. Coates, H. R. Mallison, J. N. Shannahan, W. H. Sawyer, E. F. Wickwire, B. A. Hegeman, M. B. Lambert, proxy for H. D. Shute, John Barry, proxy for J. R. Lovejoy; Past-Presidents G. H. Harries and C. L. Henry, and the following who had been especially invited: J. K. Choate, E. C. Faber, J. F. Hamilton, H. B. Flowers, Harlow Clark and H. V. Bozell, and J. W. Welsh, secretary. Of these, Messrs. Gadsden, Emmons, Sawyer, Lambert, Barry, Clark and Bozell were members of the reorganization committee. Those present at the afternoon meeting were all of the above except Messrs. Coates, Hamilton, Flowers, Gove and Hegeman and with the addition of J. H. Pardee, past-president and member of the reorganization committee.

Vernon Room Where the Meetings Will Be Held

ACCOMPANYING illustrations show the pavilion of Haddon Hall and the seating arrangement of the room in which the convention of the American Electric Railway Association will be held in October The hall is known as "Vernon Room" and is of ample size for metings of the association, measuring 85 ft. x 51 ft. Haddon Hall adjoins the Chalfonte Hotel, which appears at the left in the photograph.

The convention of the association will be held on Oct. 3-6.

W. O. Gibson to Be Sentenced

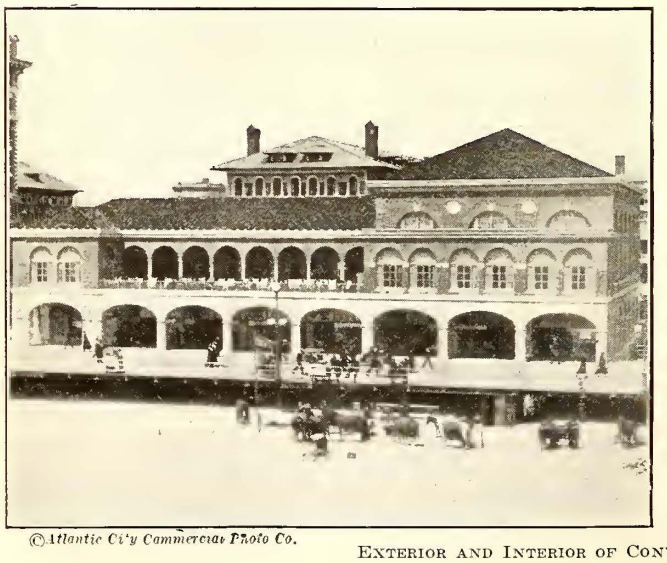
THE former bookkeeper of the association, W. O. Gibson, pleaded guilty to the charges against him on Thursday, Aug. 4, as was announced by President Gadsden at the executive meeting on Friday, the 5th. On Wednesday, Aug. 10, he was in court to receive sentence. Mr. Gibson requested a stay of sentence for two weeks. This was granted him, but his bail was cancelled and he was remanded to jail.

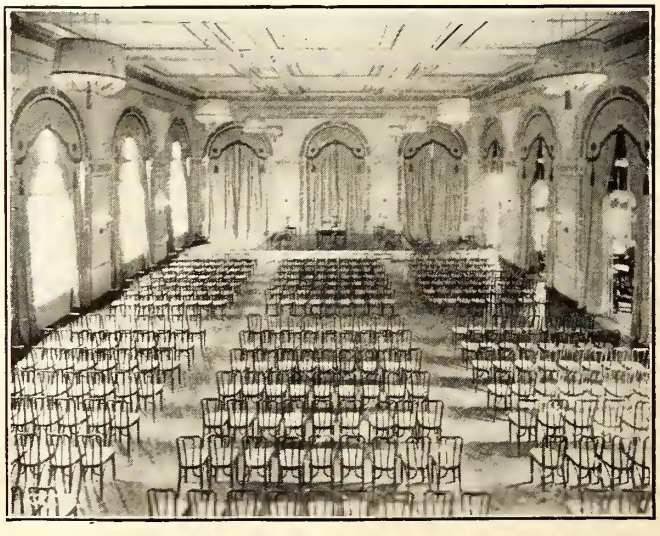
As the case now stands Mr. Gibson will receive his sentence on Aug. 24, and this should close the case so far as the association is concerned.

Tax Plea Commended

THE argument presented by President Gadsden on public utility taxation before the Ways and Means Committee of the House of Representatives and reported in last week's issue of this paper is the subject of editorial comment in the *Public Ledger* of Philadelphia for Aug. 10. The editorial says in part:

> The plea that public utility companies be * * * put in a special class for the purposes of taxation, comes with more than the amount of plausibility usually assigned to arguments in avoidance of taxation. The plea is made by Philip H. Gadsden, * * * one of the country's foremost authorities on public utility questions. * * *
>
> It is an argument that carries weight. Viewed theoretically, there may be a fundamental weakness in certain of its clauses, for the regulatory bodies in charge of public utilities are supposed to allow for some of the objections made by Mr. Gadsden in setting and revising rates. But any one will admit that there is usually a difference between theory and practice. In practice it is an expense and a detriment to the conduct of the utilities companies' business every time they are forced to apply for a revision of rates. So the fact that the law would presumably allow, for instance, for an increase of rates to offset increase of taxation is not a convincing answer to Mr. Gadsden's argument, especially when it is taken into account that such an increase of rates would amount to an indirect tax on the general public using the products of the utility companies.
>
> Utility companies would be bound to pass on this tax to the public undiminished while there is enough elasticity in general business to make it possible that in many instances the tax would be absorbed by the industry and not passed on to the public; while in other instances it would be passed on only in diminished amount. Public utilities, as legally regulated industry, are actually set aside by law as a special class in the interest of the public. Why it is not logical to perpetuate this distinction in the field of Federal taxation?





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EXTERIOR AND INTERIOR OF CONVENTION HALL AT ATLANTIC CITY

News of the Electric Railways

FINANCIAL AND CORPORATE :: TRAFFIC AND TRANSPORTATION
PERSONAL MENTION

"L" Lease Negotiations

Philadelphia Rapid Transit Anxious to Operate New Line, but Seeks to Avoid Previous Mistakes

Conferences are being continued at Philadelphia over the operation of the Frankford elevated and so-called Bustleton line by the Philadelphia Rapid Transit Company. The attitude of the railway is that it is not willing to repeat the experience of 1918 in this same matter when the city and the company agreed to the terms of the contract only to have the Public Service Commission after a year's consideration of the matter deny approval to the lease. The company insists that a representative of the commission shall sit in at the conferences so that body may be thoroughly informed as to the angles which the negotiations take.

So much misstatement appeared following the conference on Aug. 1 that at the conference on Aug. 9 the railway set forth its attitude as a matter of record. The position of the company right along has been that it would operate the Rhawn Street extension of the Frankford "L" and also the Byberry extension of the Bustleton line, if desired by the city, but in such event the Department of City Transit, with the company's engineers, should jointly prepare the best estimate possible as to the cost of these extensions and the loss to be sustained from their operation; this being necessary in order to prevent later misunderstanding.

The Philadelphia Rapid Transit Company has argued against the city building its own powerhouses entirely for reasons of economy. Since the city is now to supply its lines completely equipped for operation, the attitude of the Philadelphia Rapid Transit is that the added investment should be determined and the increased obligation to be assumed by Philadelphia Rapid Transit in paying 5 per cent interest upon city investment should be figured out. A further estimate should be made in this connection, as of the latest date possible, to determine more closely the deficit, heretofore figured at $925,000, which Philadelphia Rapid Transit will sustain in the operation of the Frankford "L" line to Bridge Street and the Byberry line as far as Bustleton.

In short, the plan of the Philadelphia Rapid Transit contemplates the early operation of the Frankford elevated and Bustleton line, with free transfers between the Frankford elevated and surface feeder lines, the city to receive 5 per cent annually upon its investment, while the railway, in order to save the city an expenditure of $1,318,000, agrees to outlay $632,000 in enlarged facilities. This amount, added to the $925,000 deficit from operation, makes a total of $1,557,000 to be overcome at the outset.

As a further help to a better understanding of the issues involved the railway has included in a pamphlet which it issued recently the correspondence and contract embracing negotiations up to the time of submitting the draft of the lease to the City Council on March 31, 1921, including the joint reports of city transit and Philadelphia Rapid Transit engineers.

Way Cleared for Extension

The last obstacle to the extension of the line of the Tacoma Railway & Power Company from Sixth Avenue along Washington Street into the Stevens Street district was removed recently when Attorney-General L. L. Thompson at Olympia ruled that the City Council had the the right to exempt the railway from the payment of 2 per cent gross sales tax and from the payment of street assessments. It remains now for the City Council and the company to settle details.

Mayor Riddell expresses himself as opposed to granting a release of the railway from its franchise obligations to pay the city a gross earnings tax and to pave between the rails. He does not believe the City Council has the power the Attorney-General says it has.

The company proposed some months ago to undertake construction of a line to serve the college of Puget Sound and Stevens Street district, provided certain relief was extended.

In his decision, the Attorney-General states:

> The Supreme Court has held in numerous cases that the city charters placing further restrictions upon granting of franchises than those provided by the state law are inoperative and that the legislative body of the city is restricted in its rights only by state law.

Mr. Cunningham Discusses the Railroads

William J. Cunningham is contributing a series of articles on the railroad problem to the New York *Evening Post.* One of the series appears every Tuesday. The articles will run for an indefinite period. They are both informative and interesting. The idea actuating the *Post* was to secure an expression of opinion by a recognized authority on this important subject, and no other man that the *Post* could find combined so well the necessary practical experience and the detached point of view of the student. Mr. Cunningham has been a practical railroad man and has a national reputation as a railway statistician. During the Government administration of the railways he filled a position of great responsibility at Washington and he is now filling the James J. Hill chair of transportation at Harvard University.

Mayor Signs Ouster

Detroit Railway Confronted With Accepting $388,000 for Lines or $800,000 to Scrap Them

Disregarding the protests of the merchants located on Fort Street and Woodward Avenue, the Detroit City Council passed the ordinance ousting the Detroit United Railway from these two streets, where franchises have expired. The ordinance has been signed by Mayor Couzens. The Mayor and the city officials still believe that the city's offer of $388,000 for these lines will be accepted by the company and that the tracks will not be torn up.

A possible settlement of the controversy was seen in the Mayor's announcement that the Detroit United Railway would be permitted to operate its cars over the Fort Street and Woodward Avenue lines after the lines have been acquired by the city. The arrangement, the Mayor maintained, would have to be on a day-to-day agreement on a car-mile basis. The company had previously suggested that the city would be permitted to operate its cars over the company's tracks on Fort Street and Woodward Avenue, but the city is insistent that title to the lines in these streets shall lie with it.

The offer which the city has made for the Fort Street and Woodward Avenue lines is apparently the city's final action with regard to these lines, and unless some further proposition is made by the company, the city will insist on enforcing the ordinance which orders the company off the two streets.

Engineers for the Street Railway Commission started work the morning after the ordinance was passed surveying Fort Street for municipal lines. Plans will be laid for both temporary and permanent tracks so that as little delay as possible will result whatever action is taken by the company. The ordinance goes into effect thirty days after the signing by the Mayor and in ten days thereafter service must be discontinued by the company. Ninety days after the ordinance goes into effect the tracks must be removed from the streets.

Alex Dow, director of the company, has stated that the city's offer will not be accepted, and has intimated that the passing of the ordinance might mean discontinuing service immediately on the lines in question. In a few words the company is confronted with the problem of accepting the city's offer of $388,000 for the lines or spending a large sum to tear up the tracks and restore the streets.

Arbitration with regard to taking over by the city of the day-to-day agreement lines of the Detroit United Railway has been temporarily halted

by the adjournment of the board of arbitrators until September when the board will again meet. In the meantime the engineers for the Street Railway Commission will have an opportunity to survey the cars and equipment which the city may acquire with the lines. Owing to the difficulty in specifying just what cars were provided by the company for use on the day-to-day lines, many cars have been designated for selection.

$325,000 for Track Maintenance

According to a statement of F. I. Fuller first vice-president of the Portland Railway, Light & Power Company, Portland, Ore., the company expended $361,931 for maintenance and reconstruction on track, paving, overhead lines, cars, etc., on the city lines, exclusive of depreciation charges, and $160,619 on track maintenance and reconstruction and paving only on city lines during the first five months of 1921.

Mr. Fuller's statement calls attention to the efforts of the company to take care of necessary features connected with the maintenance of its lines, as set forth by its representatives when the Public Service Commission was hearing its petition for an increase in fares. H declares the corporation acted in good faith, and is fulfilling its obligations to the public as rapidly as possibl considering all phases of the situation.

For the ensuing five months of June, July, August, September and October the expenditures for maintenance and reconstruction on track and paving on work already ordered and in sight will amount to over $325,000, or an average of $65,000 a month, about three times the expenditure for the same period in 1920.

Altogether the maintenance work on the city lines and equipment of the company is being carried on on a much more extensive scale than at any period in the last five years.

Suburban Men Again on Strike

The employees of the Syracuse & Suburban Railroad, Syracuse, N. Y., went on strike on Aug. 4. The men dispute the statements attributed to officials of the company to the effect that the men had agreed at a meeting with the officials on July 22, to arbitration proceedings. They declare that at that time C. Loomis Allen, the president of the railway, was told that they could not accept the provisions of the arbitration agreement as drawn up by him, and that they did not sign.

This is the third suspension of operation by the road in a period of a little more than a year. There was a strike in May, 1920, which the men won after a tie-up of several days. From Jan. 1 to March 11 the road quit operation under the claim that it could not operate until certain franchise conditions were altered and wages lowered. The company was successful in the former and temporarily so in the latter contention, although it is that dispute which is the cause of the present strike.

Arbitration Demanded

Montreal Company Formally Notified to This Effect—Wages Cut Only 12½ Per Cent

The Montreal (Que.) Tramways was officially notified on Aug. 8 by the Federal Department of Labor that the employees' union had applied for a board of arbitration in the matter of the reduction of wages proposed by the company. The men have chosen as their representative Arthur Sauve, a member of the Quebec provincial parliament, but he has not yet signified his acceptance. The company has not yet announced any decision as to its nomination of an arbitrator on its behalf. Failing such action by the company, the Federal Act gives the Labor Department power to nominate a representative for the company, and the two nominees will then choose a third. The company, however, is under no compulsion to accept any award made by such an arbitration board.

Meanwhile the company has posted notices that a wage reduction of 12½ per cent will go into effect on Aug. 16. This is a substitute for the 20 per cent reduction proposed by the company and the 10 per cent reduction which the men's delegates were willing to submit to the union for acceptance.

Under the 12½ per cent reduction, first-year motormen and conductors will receive 39½ cents an hour, second-year men 44 cents, and those employed more than two years 48 cents an hour. One-man car operators will receive 4 cents an hour extra. This proposed scale is intended by the company to run from month to month, subject to change in accordance with circumstances. The management points out that earnings have been reduced by the industrial depression, resulting in a substantial decrease of the use of cars by the working classes.

The company is facing the necessity of raising between $5,000,000 and $10,000,000 within the next year. Part of this is needed to retire maturing obligations of $3,000,000, and part for extensions and improvements, on which about $1,500,000 is being expended this season, with others planned for next year.

So far, although both sides to the dispute are maintaining a firm attitude, there is no serious talk of a strike.

Special Master in New Orleans Fare Case

Judge Henry D. Clayton, who is presiding in the Federal District Court for the eastern district of Louisiana, in the pending litigation between the New Orleans Railway & Light Company and the city of New Orleans, has appointed D. B. H. Chaffe, New Orleans, as special master to hear the evidence.

It will be recalled that Judge Rufus E. Foster, at the request of parties at interest, excused himself in this suit, which was brought by the city on the ground that the railway was without authority to continue charging an 8-cent fare as the ordinance giving it that right had expired by limitation.

In naming Mr. Chaffe, Judge Clayton announced that it would be impractical for the court to hear all the evidence. Mr. Chaffe was ordered to proceed at once to take testimony.

Municipal Road "Saved" by Councilmen

Charles M. Robbins, Attleboro, Mass., is a peppery individual. He dislikes to vote away other people's money. As a member of the City Council there, he spoke right out in an open meeting recently giving his views about the municipally owned Norton, Taunton & Attleboro Street Railway. He said that he felt "that we (the councilmen) ought to unite and pray that some night the earth would open up and swallow the confounded road."

Mr. Robbins, as these remarks indicate, was vexed. He had reason to be vexed. His utterance preceded a vote by him to appropriate $2,000 of the funds of his fellow townsmen to meet a deficit in the operating expenses of the road. The other towns involved with Attleboro in the responsibility for running the road had previously voted proportionate amounts, so that there was little else for Attleboro to do than to shell out. Mr. Robbins might have to vote on the matter; he might even have to do so against his best judgment, but he did not have to be silent about it.

It seems that this road has been a source of constant annoyance ever since it was taken over by the municipalities. The private company was unable to make the road pay, and the cities, as might have been expected, have been no more successful at the task of keeping expenditures within income. Creditors are no respectors of persons, so the coal man, whose patience had been exhausted after he had made futile efforts to have his bill honored, brought suit for a receiver for the property. This would look like another rapacious act of the coal man, but that individual has enough sins charged against him. If the coal man hadn't acted, some other creditor undoubtedly would have done so. The coal man was first. That is all.

After the money had been set aside to pay the coal man, the meeting turned to other phases of the road's activities. Members of the Council began to delve into the operating figures of the road, but the results were by no means unanimously agreed upon. Howard G. Smith discovered the road to be a losing proposition. Councilor French saw a deficit of $30,000. Others insisted that the road was making money. Mayor Brady resented charges of mismanagement. Even the name of the Public Service Commission was taken in vain in connection with the matter, although the responsibility of that body for the plight of the road was not readily discernible.

Service-at-Cost Recommended for Milwaukee

Committee Reports Insuperable Obstacles to Immediate Public Acquisition of Local Utilities Under Present Available Methods—Construction of Competing Plant Deemed Not Advisable

The city of Milwaukee, Wis., is recommended by the Milwaukee Street Railway & Electric Power Acquisition Committee to enter into negotiations with the Milwaukee Electric Railway & Light Company for the operation of the company's local electric railway and electric light and power properties under a service-at-cost agreement, with provisions which would result in the ultimate municipal ownership. The committee held that there were insuperable obstacles to the immediate public acquisition of the properties under the methods now provided by the law for such acquisition, primarily because of the inability of the city to obtain sufficient funds to consummate such a purchase.

THE construction of a competing plant, aside from the questionable wisdom of such a course, was not thought to be an alternative open to Milwaukee because the Milwaukee Electric Railway & Light Company is operating under an indeterminate permit which amounts to a perpetual franchise that can be terminated only by municipal purchase. The city could not build a competing line without obtaining a "certificate of convenience and necessity" from the State Railroad Commission, which would require a showing to the satisfaction of the commission that the company was not rendering adequate service. The committee considered it beyond the range of probability that such a certificate could be obtained.

While the committee expressed the view that it could not assure the city of the success of the proposed "service-at-cost-and-acquisition" contract, it was unanimous in its opinion that this offered the most promising course for an attempt to better conditions and was the only practical method, in view of the city's financial situation and under existing laws by which ultimate acquisition was possible.

The committee suggested that if the 1914 appraisal of the property by the Wisconsin Railroad Commission, with additions to property since that date, were accepted both by the company and the city as a basis of negotiations on the subject of value, the prospect of ultimate agreement on this point would be hopeful.

The committee pointed out that while other means of transportation will be increasingly used in the future electric transportation on rails will continue to be the chief reliance for mass transportation over city streets for an indefinite period of time.

While the committee found that the city had the legal right to purchase the local public utility properties at any time, this was at the present time considered an empty right because of the city's inability to finance the purchase. The construction of a competing plant was not considered an alternative. The committee concluded, therefore, that:

> The question, therefore, as to the desirability of the public ownership of public utilities, for the present or immediate future, so far as the city of Milwaukee is concerned, is purely an academic question, since there is no practical method under the law as it has existed by which such public ownership can be brought about.
>
> It was the consideration of this fact, among others, which led the committee to inquire as to the feasibility of other methods of improving the public utility situation in Milwaukee, both by bettering the relations between the public utilities and the citizens of Milwaukee while the utilities are under private ownership, and by bringing about a situation under which the city can with less difficulty acquire such utilities at such time as the city may decide to do so.

The committee finally decided that a so-called "service-at-cost-and-acquisition" contract, if successfully negotiated by the company with the city, might tend to accomplish the end sought by the investigation. A bill permitting the city to negotiate such a contract with the company was therefore framed by the committee and upon receiving the approval of the Common Council was submitted to the State Legislature. There it was amended to provide that such a contract must receive the approval of the State Railroad Commission before becoming effective. The bill as amended became a law.

The essential features of the proposed contract as outlined in the committee's report are as follows:

1. Agreement as to the value of the properties made subject to the contract and a definite rate of return on such value.
2. Right to purchase the property by the city at the basis of value agreed upon whenever the city decides to do so.
3. The city to have the right to designate the service required of the utility, providing of course that the service will be of such a character and be rendered at such rates as will yield the return agreed upon, on the fixed value of the properties.
4. The city to have access to the books of the utility and its expenditures to be subject to the city's approval.
5. Right of the city to participate in the financing of the property.
6. The management of the properties to remain in the hands of the utility until such time as it is taken over by the city.

In discussing the fifth point the report stresses the importance of utilization of municipal credit in financing public utilities. In this connection the report says that a saving of more than $6,000,000 in interest charges might have been made during the period from 1911 to 1919 inclusive had the interest charges of the electric company been at rates equivalent to those paid by the city during the same period.

The conclusion is reached that

> Your committee believes that the time has come when an attempt should be made to relieve the cost of service rendered to the citizens of Milwaukee by public utilities of excessive interest charges. We believe this could be accomplished by a fair "service-at-cost-and-acquisition" contract, which would permit the city to participate in the financing of the utilities if it so desired, thus taking advantage of its superior credit to obtain money at low rates. No burden would be added to taxes, because the interest could be paid by the patrons of the utilities. At the same time, any excess beyond necessary requirements which might be accumulated in any reserve fund, instead of being applied toward the reduction of rates, could be applied toward the purchase of bonds of the utility or otherwise used to cut down the capitalization on which the return to the utility is calculated. This would result in the gradual acquisition by the city of an equity in the property of the utility, which would make it less burdensome for the city to take over the entire property whenever it should decide to do so.

The committee points out that all attempts to increase patronage should proceed along lines of approved business principles, the details of which will have to be worked out after the main provisions of the proposed "service-at-cost-and-acquisition" contract have been put into effect. The committee's answer to the question whether the service problem could not be better worked out under public ownership was of the same import. The committee thought that the service can and should be improved alike under public and private ownership. The question of electric railway service was reviewed in some detail in the committee's report on that subject.

In conclusion the committee stated that it was of the opinion that the most hopeful line of procedure for the city of of Milwaukee to follow in an endeavor to improve the relations between the city and its utilities and secure better co-operation and understanding while the ownership remained in private hands, was in an attempt to negotiate a "service-at-cost-and-acquisition" contract. The committee stated that it believed this to be the only practical method under the law as it now exists by which, should the city desire, public ownership of such utilities might be brought about.

The committee's report on the financial history of the company alleged that as a result of certain transactions in the past, "water" had been injected into the capitalization of the company, which it was claimed—"total $9,753,832 or nearly the total face value of the common stock outstanding, which is $9,850,000." The criticism was also made that in the years 1918 and 1919 the company took approximately $1,000,000 out of some fifteen reserve accounts and added the amount to surplus which made it available for dividend purposes. In 1920 the report stated the company paid 7¼ per cent on its common stock out of current earnings and 4¾ per cent out of reserves previously created. The common stock thus received a return of 12 per cent.

In advertisements published to further the sale of a recent $3,000,000 issue of preferred stock, the company has made the following comment on the report of the Public Acquisition Committee:

> Within the past ten days the company has received another indorsement of equal interest to its investors, present and prospective. This second indorsement was contained in the report of the city of Milwaukee's committee on municipal purchase, etc. In this report, covering more than a year of inquiry, the committee submitted findings which may be briefed as follows:
>
> 1. The company's indeterminate permit is in effect a perpetual franchise, which can be terminated only by municipal purchase of the property and business.
> 2. The city has no means of raising the huge sum needed for such purchase.
> 3. The state would not permit the city to build competing systems, if the city had funds for that purpose.
>
> With regard to the value of the company's property, the report confirms the State's inventory as of Jan. 1, 1914, which showed

actual values larger than the total outstanding securities and obligations. Whatever excess of capitalization may have taken place twenty years or more ago, the stockholders have long since replaced with solid property values, at their expense, out of earnings which were less than a fair return. The report's criticism of the transfer of surplus from reserve to dividend fund calls for this comment: that surplus was legitimately earned years before State regulation became effective, and was the undisputed property of the company's stockholders.

The company recognizes the city's legal right to purchase its property and business, at their full fair value, any time the city may be able to find the purchase price. The company, in such event, will place no obstacle in the way of municipal purchase, being absolutely assured that every dollar of investment, past or future, represented by its securities, is amply protected against a penny of loss in case of such purchase. Pending action to purchase, which may be many years in the future, the company will welcome the city's co-operation in all measures calculated to get for the public increased good service at its lowest fair cost.

It is expected that the members of the Public Utilities Acquisition Committee will be appointed members of a committee whose function it will be to negotiate a "service-at-cost-and-acquisition" contract with the company.

The Public Utilities Acquisition Committee, as it is popularly known in Milwaukee, was appointed in July, 1919, by the president of the Milwaukee Common Council in response to a resolution calling for an investigation of the feasibility and advisability of the city acquiring the local electric railway and electric light and power utilities. The committee consisted of the following: Fred S. Hunt, a local manufacturer, chairman; William E. Black, an attorney at law; J. J. Handley, secretary Wisconsin State Federation of Labor; Lyle H. Olsen, general manager of the American Appraisal Company; and three members of the Common Council, namely, J. W. Radtke and Albert Janicki, Non-Partisan, and John Doefler, Jr., Socialist. The committee's report as submitted represents eighteen months' study of the local utility situation by the committee and by a staff of investigators working under the supervision of its permanent secretary, M. G. Glaeser of the Economics Department of the Universty of Wisconsin, assisted by H. G. Abendroth, an accountant.

Surface Men Accept Cut

Following the reduction in wages of employees of the Interborough Rapid Transit Company, New York, N. Y., the receiver of the New York Railways, operating the lower Broadway and other important surface lines, conferred with the general committee of the Brotherhood of New York Railways Employees, to whom he explained the necessity of a reduction in operating costs.

The receiver asked the co-operation of the employees in this matter. The Brotherhood thereupon called meetings of its various locals. As a result, about 92 per cent of the members voted to accept a voluntary reduction of 10 per cent in the existing scale of wages, to take effect Aug. 7, 1921. The general committee in turn voted unanimously to accept on behalf of the Brotherhood such 10 per cent reduction in wages.

The maximum and minimum wages have been approximately as follows: motormen and conductors 59 to 67 cents an hour; engineering and shop force, 52 to 70 cents an hour; motor power, 52 to 90 cents an hour. There will be no change in hours or working conditions. Motormen and conductors work an average of ten hours a day and shop workers nine hours. Time and a half will still be granted for overtime.

Mutual Insurance in Boston

Elevated Railway Endeavors To Reduce Cost of Workmen's Compensation Insurance

Twelve officials of the Boston (Mass.) Elevated Railway have associated themselves together for the purpose of forming a new liability insurance company. A charter was obtained on March 8, 1921, authorizing the Transit Mutual Insurance Company to conduct a general insurance business on the mutal plan. On March 13 the State Insurance Commissioner issued a certificate to this company to do business.

The reason for forming the new insurance company was to attempt to reduce the cost of workmen's compensation insurance, on the Boston Elevated, the advance premium of which has grown from $115,000 in 1912, to $237,000 in 1921. The reason for this increase has been due partly to the increased benefits conferred by the Legislature by way of increasing the benefits to employees.

The Transit Mutual Insurance Company commenced business on April 1, 1921, taking two offices in the same building with the Boston Elevated Railway. The business is conducted by four employees, manager, stenographer, bookkeeper and investigator. It is the intention of this company for the first year not to solicit or accept business other than its present policy holders which consist of the Boston Elevated Railway as a subscriber under the Workmen's Compensation Act, and several automobile owners, landlords and tenants public liability policies.

All accidents to employees occuring over the entire system of the Boston Elevated Railway are reported in duplicate to the insurance company, one copy being filed in the office of the insurance company and the other being filed with the Industrial Accident Board, which has jurisdiction over the administration of the Workmen's Compensation Act.

The Boston Elevated Railway Company has approximately 10,000 employees and the officials having charge of these employees are all directors of the Transit Mutual Insurance Company. Through the close relationship existing between the two companies very effective safety work has been done since the insurance company started business. The cost of accidents to employees is set against the record of the foreman or superintendent in charge of each plant or location and this has a tendency to promote safety activities in each department to maintain a good record in accident prevention work.

The personnel of the board of directors and officials is particularly favorable to the success of the new company, all having had a wide experience in business and professional activities. The directors and officials of the Transit Mutual Insurance Company serve without compensation. The names of the directors and officials of the Transit Mutual Insurance Company are: Russell A. Sears, president; Stanley R. Miller, vice-president; John F. Stevens, vice-president; John H. Moran, secretary; Henry L. Wilson, treasurer; H. Ware Barnum, Edward Dana, Frederick S. Freeman, John Lindall, H. Bertram Potter, James Smith and Harry M. Steward.

Ralph C. Bush was appointed manager of the Transit Mutual Insurance Company at a meeting of the board of directors held on March 17, 1921. Mr. Bush is a lawyer and has been employed in the legal department of the Boston Elevated Railway since 1912. During that time he had charge of workmen's compensation matters and during the last year was engaged in the trial of accident cases.

Employee Activities Successful at Kansas City

Annual elections have taken place among employees' organizations and committees of the Kansas City (Mo.) Railways. The first in importance of these events was the election for service during the third year of the plan of committeemen to serve under the representative plan. This election aroused keen interest among employees at all points and visions of the system. In most instances there were several candidates for positions, although close and exciting races resulted the best of feeling prevailed in the contests. There was no question of "policy" involved in any contest, the aim of voters being to select the employees best qualified to fulfill duties.

The Kansas City Railways Building, Savings & Loan Association held its annual meeting recently. F. G. Buffe, general manager of the company, was elected president, and E. E. Stigall, purchasing agent, vice-president. I. B. Nordyke continues as secretary, and L. M. Boschert as treasurer. Twelve hundred of the company's employees are members of the association, paying in an average of $10 a month. Applications for loans, chiefly for home building, are increasing as members establish savings sufficient to begin home planning.

The Railways Employees Brotherhood has a membership of 2,600 out of a possible 3,000. Dances or other entertainments are arranged by brotherhood committees in each division at least once in two months. The Brotherhood Baseball League has this year eight teams, an increase of two teams over last year. Games are being played at Tramway Park, provided by the company. The Brotherhood operates successfully a grocery store—successful not only in giving service, but in making a profit.

News Notes

Wages Cut in Dallas.—The Dallas (Tex.) Railway has announced a 10 per cent reduction in wages, effective at once.

Reduced Three Cents an Hour.—A reduction in the wages of the motormen and conductors in the employ of the Beech Grove Traction Company, Indianapolis, Ind., will take effect on Aug. 16. Trainmen will be reduced from 41 cents an hour to 38 cents, trackmen from 38 cents to 30 cents, and one-man car operators from 46 to 43 cents an hour.

Railway Man Flies.—Horace Lowry, president of the Twin City Rapid Transit Company, Minneapolis, Minn., has just completed an airplane trip from Minneapolis to Chicago. The trip was made without event, except for a stop for fuel at La Crosse. Mr. Lowry, who is interesting himself in aviation, wished to try out an experimental trip. With A. L. Drum, construction engineer, he reached Chicago in time for the opening of the Progress pier celebration.

Transportation in Shanghai.—In a speech before the Civic League of Shanghai, Donald McColl, manager of the Shanghai Tramways, gave some very interesting material regarding transport in cities. His talk was applied especially to conditions in Shanghai and is unique in its charts, maps and diagrams depicting conditions in that city. The address has been printed in pamphlet form with all illustrations, and makes a valuable addition to the transportation literature of China.

Men's Wages Cut Again. — For the second time within a year the wages of conductors and motormen in the employ of the Rockford (Ill.) Traction Company have been reduced. The reduction which took effect on Aug. 1 amounts to 5 cents an hour. About the middle of January this year when the fare was advanced from 7 cents to 8 cents the pay of the trainmen, shopmen and office force was cut 7 cents an hour. The details of this cut were given in the ELECTRIC RAILWAY JOURNAL, issue of Jan. 22.

Railway Sued in Wage Case.—One of the railways at Dayton, Ohio, that did not effect a wage settlement with its employees was the City Railway. That company finds itself confronted now with a petition filed in the Common Pleas Court in which it is alleged by five employees that there was a breach of contract on the part of the company through abrogation of its bulletin of July 6, 1920. It is alleged that the bulletin, whose terms were to have been in effect a year, provided that questions "in dispute shall be immediately submitted to a board of arbitration."

City Starts Tearing Up Tracks.—Judge Koch at Pottsville, Pa., on Aug. 3 issued an injunction against the chief burgess and fifteen members of Ashland Borough Council prohibiting them from tearing up the tracks of the Schuylkill Electric Railway until a hearing in court. The trouble arose over a demand that the tracks be placed in the center of Center Street instead of on one side, where new paving is in progress. The railway asserts it is financially unable to meet the demands for municipal improvements, coming from virtually every town on its route.

Court Action Started on Alleged Improvements.—Court action has been started in the Superior Court to compel the city of Seattle to construct additional car lines on East 55th Street, beyond Twenty-ninth Avenue N. E., for which, among other improvements, it is alleged a bond issue of $790,000 was sold May 21, 1919. The plaintiff is G. E. Hayes, for himself and other owners of the University Heights district, who claim they purchased real estate on the assumption that values would be raised by the improvement. A mandatory injunction to compel construction of the line is asked.

Voluntary Reduction of Wages Accepted.—Voluntary reduction of wages is proposed by members of the local union at Wilmington, Del., with a view of co-operating with the Wilmington & Philadelphia Traction Company, in the hope of helping to restore prosperity. Resolutions have been adopted that whenever the number of paying passengers carried in any month is lower than that of the average earned in the corresponding month of the years 1919 and 1920, with other conditions as at present, the employees will accept a reduction of 5 cents an hour for that month.

Wages Cut in Harrisburg. — Announcement has been made by officials of the Harrisburg (Pa.) Railways that effective on Aug. 16 the wages of all carmen will be cut 10 per cent, or 5 cents an hour. The new scale will give first-year men 43 cents an hour, second-year men 44 cents, and third-year men 45 cents. The reduction cancels the voluntary 5-cent increase made on March 20, 1920. The reason given for the reduction was the decline in riding. The Valley Railways also announced a similar reduction to take effect the same date. These two companies serve Harrisburg and adjacent counties.

State Rulings Supreme. — According to a recent ruling of Judge John H. Cotteral, in the United States Court of the Western Oklahoma district, the State Corporation Commission has undisputed power to modify or abrogate contracts made between two public utilities. This decision was rendered in the case of the Oklahoma Gas & Electric Company, seeking an injunction to restrain the Corporation Commission and the Oklahoma Natural Gas Company from carrying into effect the city gate rate order governing charges for natural gas delivered to local distributing companies. The court held that the power of the state is supreme and that it can change existing contracts.

Referee Suggested at New Orleans.—The Electrical League of Louisiana has injected itself into the New Orleans trolley tangle. It has addressed a communication to the Commission Council suggesting the appointment of a referee to whom shall be presented every phase of this now nationally known controversy, and it proposes that his ultimate decision shall be binding upon both the city and the New Orleans Railway & Light Company. It is suggested that a man with a national reputation as a utility expert be appointed. Along these lines the communication names Samuel Insull, Chicago; Henry L. Doherty, New York; Charles H. Edgar, Boston, and A. Merritt Taylor, Philadelphia.

Franchise Amendment in Hamilton.—A new amendment to the present franchise of the Cincinnati & Dayton Traction Company operating in Hamilton, Ohio, will become effective as soon as the company is able to provide new and modern safety car equipment. This amendment provides for the operation of one-man safety cars and simultaneously an increase in fare of from six tickets for 25 cents, and half fare for children, to 5 cents straight fare for adults and children, for a period of six months. If at the end of six months the straight 5-cent fare does not provide sufficient revenue to pay all operating expenses and fixed charges, with a proper return on the investment, then the fare will automatically go to 6 cents.

New Franchise in Highland Park.—The Chicago, North Shore & Milwaukee Railroad has succeeded after several years of negotiations in securing a new thirty-year franchise through Highland Park, Ill. The franchise was approved by the City Council and later passed by the people at a special election. The former franchise expired several years ago. Among some of the more important provisions of the new franchise is the requirement that in case the Chicago & Northwestern Railroad, whose tracks parallel those of the electric line, should elevate or depress its tracks through Highland Park at any time, the electric line shall likewise elevate or depress its tracks simultaneously. In case such grade separation is built the franchise becomes perpetual. The franchise calls for a number of improvements in the way of paving, a new station, etc., to be built within the next two or three years. All poles set in the future as the old ones are replaced must be of ornamental steel or concrete. Two main tracks through the city are permitted, those now existing; but in case of elevation or depression, the company is to be permitted to build four tracks.

Financial and Corporate

Bill Would Handicap Financing

Investment Bankers Opposed to Passage of Dennison Bill Introduced in House of Representatives

Several bills now pending before Congress have for their purpose suppressing the fraudulent offering and sale of securities. These are typical blue-sky bills, seeking to have the Federal Government take the same jurisdiction over the regulation of security offerings that is now taken by some states.

One of these bills, known as the Dennison bill, which is pending in the House Committee on Interstate Commerce, if passed, would entail great hardship on all public utilities in any financing activities. The Investment Bankers' Association of America has taken a stand against this particular bill. That body contends that if the measure now pending is enacted into law, it would compel every corporation issuing stock and every borrower issuing bonds as well as all offerers of securities to secure the advance approval of such issues in each and every state where the offering is advertised, through the public press, the periodicals of country-wide circulation, is sold through the mails and is arranged for sale by telegraph or telephone in states having blue-sky laws.

The Investment Bankers' Association further explains that if this bill becomes a law, long-established methods of selling securities would have to be changed, or banks and dealers offering the issues would become involuntary criminals. In short, before any securities intended for country-wide distribution could be offered for sale they would have to be approved in advance in practically every one of the thirty-eight states having blue-sky laws in force. Aside from the fact that legislation of the Dennison bill type is considered impractical, it would add an unwarranted cost to legitimate borrowing by the business interests of the country.

The association is supporting another bill, known as H. R. 7868. This measure is intended to curb the sale and offering of fraudulent securities through the agencies of special committees in each Federal Reserve Bank district. These committees would be so organized that as soon as the offering of a fraudulent security came to their attention they would inform the Federal Department of Justice, so that the legal machinery could be set in motion not only to stop the further offering of such securities, but to punish the offender if he continued to offer them. This bill provides that there shall be no interference in any way with any state blue-sky law now in force or that may be adopted, but that it shall supplement such blue-sky laws. The bill proposes a somewhat similar type of legislation to that recently adopted by some of the states, notably New York, Maryland and New Jersey.

$12,000,000 Increase in Net in Seventeen Years

Stone & Webster, Inc., has issued a chart showing the combined earnings of all the companies under its management, the relation of these earnings each year to the outstanding capital and the resulting effect upon security values as reflected in market quotations. The operating expenses and taxes are shown in one color, interest charges in another, dividends in a third, and balance for reserves and replacements in a fourth color.

The chart shows that the gross earnings have increased from $9,000,000 in 1904 to $40,000,000 in 1920, and the net from $3,000,000 in 1904 to $15,000,000 in 1920. During this period of seventeen years there have been only two years, 1915 and 1919, when gross and net earnings were not larger than in the previous year.

The capital outstanding, consisting of bonds, coupon notes, preferred and common stock, has increased from approximately $73,000,000 in 1904 to $219,000,000 in 1920. In 1904 for each dollar of the gross earnings there was outstanding $8 of capital, divided between $3.50 of debt and $4.50 of capital stock. In 1920 for each dollar of gross earnings, there was outstanding $5.40 in capital divided between $2.60 of debt and $2.80 of capital stock.

The statement declares that during the past five years, out of a combined balance after interest charges of $35,000,000 only $15,000,000 was distributed in dividends and more than $20,000,000 was turned back into the properties.

Stock to Retire Debentures. — The stock of the Texas Electric Railway, Dallas, Tex., has been increased from $10,000,000 to $12,500,000 to provide for an issue of first preferred stock to retire debenture.

City Expert's Report Expected

Utility Expert Ballard, who has been employed by the city of New Orleans, La., to make another valuation of the property of the New Orleans Railway & Light Company, is now actively engaged at the task and is being assisted by a corps of aids. Mr. Ballard is credited with the statement that from the present outlook he will not be ready to submit his report to the Commission Council before Sept. 1.

The city authorities do not look for a settlement of the railway problem before January, 1922, even if the report of Mr. Ballard should be ready for submission to them in September. The officers of the railway themselves say that it will require from four to six months to install the needed machinery and power equipment required to bring the plant up to the standard of efficiency desired, after the matter of valuation, rate of return and fare has been decided.

Dangerous Tendency Shown in Recent Financing

The interim report of the subcommittee on electric securities of the Investment Bankers' Association on "The Importance of Adequate Junior Financing," referred to in the ELECTRIC RAILWAY JOURNAL for July 2, contained the accompanying table prepared for the association by Frederick M. Peyser, of the *Commercial & Financial Chronicle*. This table was secured by going over the files of the *Chronicle* for the past fifteen years, listing all the offerings or notices of issue of securities by note percentages were 88.58 as against stock percentage of 11.42.

COMPILATION SHOWING PERCENTAGES OF SECURITIES USED IN FINANCING

	Common Stock	Per Cent	Preferred Stock	Per Cent	Notes	Per Cent	Bonds	Per Cent	Total
1906 1907 1908	$195,399,687	21.23	$21,381,475	2.32	$156,624,000	17.02	$547,007,400	59.43	$920,412,562
1909 1910 1911	246,292,890	19.86	89,041,700	7.18	161,655,000	13.04	742,881,503	59.92	1,239,851,093
1912 1913 1914	164,458,440	10.64	133,919,400	8.66	288,493,888	18.66	959,224,661	62.04	1,546,096,389
1915 1916 1917	190,972,883	14.02	113,460,621	8.33	351,234,625	25.78	706,686,472	51.87	1,362,354,601
1918 1919 1920	99,226,400	6.63	71,731,321	4.79	684,407,513	45.69	642,423,104	42.89	1,497,788,338
Total for 15 years	896,330,300	13.65	429,534,517	6.54	1,642,415,026	25.01	3,598,223,140	54.80	6,566,502,983

The figures as given for the total of fifteen years show a combined note and bond financing of 79.81 and a combined stock financing of 20.19 as against the theoretical 50-50.

The figures were prepared for each year and then arranged in three-year periods, with percentages for each class of security for each period, and also with percentages of each class of security for the fifteen-year period.

During the last three-year period (1918-1919-1920), the total bond and electric light and power, gas, traction, waterworks, and telephone companies, and then classifying them into tables of the total bonds, notes, preferred stock, and common stock.

San Diego's First Quarter Good

14 Per Cent More Riders at 5 Cents, 10 Per Cent More at 7½ Cents, and Only 1½ Per Cent Fewer at 10 Cents

Operating statistics of the San Diego Electric Railway for the first quarter of 1921 appear below. The figures for 1920 were printed on page 875 of the issue of this paper for May 7. The statistics are particularly interesting because of the zone system of fares used on this property. The revenue from transportation, compared with the first three months of 1920, increased from $317,865 to $346,962 or 9.15 per cent, this being due to an increase of approximately 9 per cent in revenue passengers. This average came through a 14.01 per cent increase in 5-cent short-haul riders, a 10.48 per cent increase in 7½-cent (four tickets for 30 cents), two-zone riders, a 1.48 per cent decrease in 10-cent cash two-zone riders, and a 0.75 per cent decrease in miscellaneous ticket riders. The fact that the 7½-cent tickets sold in larger numbers while the equivalent 10-cent cash fare decline is evidence of the popularity of the company's plan to improve fare collection and schedules, as well as to stimulate riding, through the sale of easy-to-use and easy-to-spend transportation.

At the same time it was found possible to decrease car-miles by 11 per cent and thus to increase the density of traffic (passengers per car-mile) by 23 per cent. This is also reflected by the fact that the seats offered were reduced from 11,391,482 to 9,164,314 or 19.55 per cent, while leaving 1.43 instead of 1.94 seats per passenger carried—a decline of 26.29 per cent. Detail operating data presented in the two accompanying tables show also the increase in revenue per car-mile from 35.09 cents to 42 cents, or 17 per cent.

GENERAL OPERATING STATISTICS OF SAN DIEGO ELECTRIC RAILWAY

	January-March 1921	January-March 1920	Per cent Change
Revenue from transportation	$346,962	$317,865	9.15
Revenue from other railway operations	1,412	17,945	*92.11*
Non-operating income	2,787	3,240	*13.97*
Total income	$351,162	$339,050	3 57
Revenue Passengers Carried:			
Cash Fares			
5 Cents	2,176,534	1,909,012	14 01
10 Cents	178,366	181,049	*1.48*
Other	8,500	8,474	0 31
Total cash fares	2,363,400	2,098,535	12 62
Revenue Tickets			
7½ Cents	2,171,606	1,965,491	10.48
Other	932,059	939,119	*0.75*
Total revenue tickets	3,103,665	2,904,610	6 85
Total revenue passengers	6,384,604	5,859,237	8 97
Car-Miles and Car-Hours			
Car-miles operated	833,793	943,854	*11.66*
Car-hours operated	89,410	99,210	*9.88*
Car-miles per car-hour	9.32	9.51	*2.00*
Revenue passengers per car-mile (exclusive of transfers)	6 56	5 30	23 72
Total passengers per car-mile (inclusive of transfers)	7.66	6 21	23.35
Seats offered	9,164,314	11,391,482	*19.55*
Seats per passenger	1.43	1 94	*26.29*

Pacific Electric Would Abandon Its Harbor Lines

The Pacific Electric Railway, Los Angeles, Cal., has asked the California State Railroad Commission for permission to abandon its entire local railway system of some 5 miles of single track in the Los Angeles Harbor District if the property owners of the harbor district continue to insist that the company double-track its system on Sixth Street at a cost of $80,000. Announcement to this effect was made on July 27 by H. B. Titcomb, vice-president of the railway. The company is operating its local lines in the harbor district at a loss, and additional expenses heaped upon the company at this time will merely add to these losses.

Mr. Titcomb said:

> The city has granted permits for the operation of jitneys on Pacific Avenue and Sixth Street, and these buses operate over the very pavements we have paid for and on which we pay taxes. It costs the Pacific Electric 33 per cent of its gross for taxes and upkeep, while it costs the jitneys little or nothing by comparison. We cannot continue operating at a loss, and we hope the Railroad Commission will be able to see the predicament in which our system has been placed in the harbor district. The jitney has taken a large toll of our harbor city travel, and if we are compelled to make further heavy expenditures there we will be compelled to abandon our San Pedro system.

CAR-MILE STATISTICS IN CENTS PER CAR-MILE, SAN DIEGO ELECTRIC RAILWAY

	January-March 1921	January-March 1920	Per cent Change
Revenue from transportation	41.61	33.68	23.05
Revenue from other railway operations	0.17	1.90	*91.05*
Non-operating revenue	0 33	0.34	*2.94*
Total income	42.11	35 92	17.23
Revenue Passengers Carried per Car-Mile			
Cash Fares			
5 Cents	2.61	2 02	29 21
10 Cents	0 21	0.19	10.53
Other	0.02	0 01	10.00
Total cash fares	2.84	2 22	27.93
Revenue tickets			
7½ Cents	2.60	2 09	24 40
Other	1.12	0.99	13.13
Total revenue tickets	3.72	3 08	20 78

Note—Italics denote decrease.

Business Poor on Electrified Line in South Jersey

According to the twenty-fifth annual report of the West Jersey & Seashore Railroad for the year 1920, the net income showed a deficit of $463,148. The company either owns or operates under trackage rights 361 miles of track and two ferryboat lines of 2 miles. The combined compensation and operating results for 1920 show a decrease of $1,094,000 compared with 1919.

The total railway operating revenues were $13,914,442 and operating expenses $13,999,620, leaving a net deficit from railway operation of $85,177. Deducting railway tax accruals amounting to $571,832, which amount is equivalent to nearly 5 per cent return upon the capital stock, and net hire of equipment and joint facility rents—which amount to $382,000, makes the net operating deficit $1,039,063; other operations, however, netted a profit, so that the deficit for the year was only $363,699 before setting up the sinking fund reserve.

More than 60 per cent of the gross revenue is derived from passenger traffic. The company relies mainly upon its summer business to earn fixed charges and dividends and to offset the operating deficit that accrues during the balance of the year.

I. R. T. Notes Extended—$4,000,000 Saving in Expenses

The Transit Commission at New York City has authorized the Interborough Rapid Transit Company, New York, N. Y., to extend to Sept. 1, 1922, its $38,144,400 of outstanding 7 per cent convertible gold notes which become payable on Sept. 1, 1921. The renewal will be at the interest rate of 8 per cent. In a circular to the noteholders, the company declares it is unquestionably to the interest of the holders of the 7 per cent notes to preserve the existing status by agreeing to renew the notes "rather than to precipitate a receivership when the company is apparently on the eve of a recovery of its credit."

Chairman McEneny, of the commission, stated that the commission was of the opinion that the interest of all concerned will best be served by reasonable extension of these notes.

Concerning the company's condition and prospects, the circular to noteholders says:

> The company has completed a readjustment of its wage rates, effective July 24, 1921, by which its employees, to help avoid a receivership, have agreed to accept a reduction of 10 per cent, thus effecting a saving at the rate of $2,600,000 a year.
>
> Reductions in the price of coal and supplies, together with operating economies due to mechanical improvements devised by the management, will effect a further annual saving of at least $1,500,000, or an aggregate reduction in expenses at the rate of more than $4,000,000 per annum for the present fiscal year ending June 30, 1922.
>
> The total of these expected economies very closely approximate the $4,464,000 by which the company failed to meet fixed charges for the fiscal year ended June 30, 1921, during which period, however, the peak of extraordinary costs was passed.
>
> It is reasonable to expect that with these

economies of more than $4,000,000 the company will be able to pay fixed charges, including interest on the 5 per cent bonds and these notes, and also to provide for current expenses.

Thus with the notes extended and the continued indulgence of its general creditors, the company should be able to maintain, and probably gradually improve, its present position until the Transit Commission shall have had an opportunity for action in the premises.

Financial News Notes

Haytian Property Sold.—An order has been signed by Federal Judge Mack authorizing the sale of the assets of the Haytian-American Corporation to five creditor banks for $650,000. This was the only bid received. The banks are the Irving National Bank of this city, the Fletcher American National and the Continental National of Indianapolis, and the National Exchange and the Second National of Baltimore.

Value Placed on Massachusetts Property.—The Interstate Commerce Commission has found $150,000 to be the final value of the Conway Electric Street Railway. The line extends from Conway to Deerfield, Mass. The commission finds that it would cost $192,505 to reproduce the line. The corporate operations of the carrier from April 2, 1895, to June 30, 1914, the valuation date, resulted in net earnings of $61,208. The carrier never has paid dividends. The investment in road and equipment was found to be $234,305.

Detroit Bonds Taken Up.—Announcement has been made that the $1,400,000 first consolidated mortgage bonds of the Detroit & Flint Railway, which matured on Aug. 1, 1921, will be taken up from the present holders upon presentation to the Central Union Trust Company, New York. The Michigan Public Utilities Commission has approved the issue of $4,000,000 of Detroit United Railway first mortgage collateral 8 per cent sinking fund bonds. These bonds were placed for refunding purposes.

Tacoma Seeking to Get From Under.—The city of Tacoma, Wash., has been promised a hearing before the United States Shipping Board in connection with its claim for cancellation of the debt of $232,000 advanced by the Shipping Board for double-tracking the municipal railway to the tide-flats, constructed as a war measure. The city takes the position that the line was put in as a war measure and that the Federal government should not require the city to shoulder the burdensome line, which since the war has been a continuous liability.

Lines Running to Princeton Consolidated.—Four electric railways operating between Trenton and Princeton, N. J., which have been affiliated for some time, have been consolidated as the Trenton-Princeton Traction Company. The lines amalgamated are the New Jersey and Pennsylvania Traction Co.; Trenton, Lawrenceville & Princeton Railway; Trenton, Lawrenceville & Princeton Railroad and Princeton Street Railway. The lines were built by Albert and Tom L. Johnson and their associates. The consolidation is mostly in the interest of economy in administering the affairs of the companies.

Another Customer Ownership Campaign.—The Evansville Gas & Electric Company, operating the city railway lines and the gas and electric light plants at Evansville, Ind., has circulated folders and letters appealing to the people of Evansville to buy stock in the company. The 500 employees of the company are aiding in selling the stock. Frank J. Haas, vice-president and general manager of the company, says that about 30 per cent of the stockholders of the company are women. In the present stock campaign an especial appeal will be made to housewives to buy the stock offered by the company.

Change in Status of Bonds.—A meeting of holders of French currency bonds of the Quebec Railway, Light, Heat & Power Company, Quebec, Canada, was set for Aug. 11, to consider the proposal of the company for the payment of overdue interest coupons and the conversion of the outstanding bonds into income bonds, after the making of the partial cash payment. The two bond issues affected are those forming part of an authorized issue of 60,000,000 francs, French currency, executed in March, 1920, and part of an authorized issue of 13,000,000 francs executed in January, 1911.

Railway Loses $342,681.—For the six months ended June 30, 1921, the International Railway, Buffalo, N. Y., increased its operating revenue over the same period a year ago from $5,126,729 to $5,274,178. Operating expenses and taxes increased more than $500,000, which left an operating income of only $388,973, against $770,183 a year ago. The deficit for the six months period is $342,681, against a deficit for the first six months of 1920 of $34,722. The gross revenues failed by $916,683 to provide for depreciation, taxes, etc.

Sale Under Foreclosure Ordered.—Public sale of the property of the Vincennes (Ind.) Traction Company was ordered by Judge Francis E. Baker, United States district judge, in a decree of foreclosure filed in Federal Court at Indianapolis on July 22. According to the terms of the decree the sale will be held about the middle of September. It is ordered that no bid of less than $150,000 be accepted. The decree is the result of a petition of the Mercantile Trust Company, St. Louis. According to the decree there are now outstanding bonds amounting to $282,251, principal and accrued interest. These bonds were put out in two issues, the first for $200,000 in January, 1903, due in 1923; the second for $50,000 in May, 1906, due in 1931.

$55,789 Increase in Balance.—The Fonda, Johnstown & Gloversville Railroad, Gloversville, N. Y., reports for the year ended Dec. 31 total operating revenue of $1,431,562, compared with $1,251,651 for the previous year. Operating expenses $920,879, against $903,399; railway operating income $456,786, against $383,688; net income available for dividend $111,576, compared with $55,787. After deducting dividends on preferred stock amounting to $30,000 there was left a balance to profit and loss of $81,576, against $25,787 for 1919.

Marietta Line Run at Loss.—The Monongahela Power & Railway Company lost the sum of $924.61 in operating its railway system in Marietta, Ohio, during the month of June, according to figures submitted to the City Council. The line included in the statement is designated under the sixty days' trial period as Route No. 1. Council ordered the company to proceed immediately with the removal of the rails on streets where the lines have been abandoned. City Solicitor Ward was asked for an opinion regarding proper procedure and he stated that it was his understanding that the railway had given up its rights and if a majority of the residents favored removal of the tracks he did not see why Council should not decide favorably and order the company to comply.

New Bond Issue for Chicago Motor Bus.—The Lake Shore Motor Bus Corporation, which is the successor to the Chicago Motor Bus Company, is offering through the Stanwood Company, investment bankers of Chicago, an issue of $750,000 of 8 per cent first mortgage and collateral trust sinking fund bonds. The amount now offered is half of an authorized issue of $1,500,000. The bonds are due Dec. 1, 1935, and are being sold at 97½ to yield about 8.40 per cent. The prospectus of the company states that for the first six months of the current year the bus company carried 3,541,747 passengers, an increase of 810,074 over the same period in 1920. It also states that as soon as feasible, service will be extended to the South Side in Chicago. The company holds a franchise for this extension.

$9,172,500 of Notes Paid.—The Philadelphia Company, operating the Pittsburgh Railways, has called for payment before maturity the outstanding $9,172,500 of three-year 6 per cent secured gold notes, due Feb. 1, 1922. This clears off a part of the refinancing program which the company must carry out during the next year. In addition to the three-year notes, which have been called for payment on Oct. 1 at 100½, the company has an issue of $9,794,000 ten-year 5 per cent debenture bonds falling due May 1, 1922. Payment of the three-year notes has been provided for through funds which came into the company's treasury through the recent issue of $10,000,000 bonds by the Duquesne Light Company, the proceeds of this issue having been turned over to the parent company in payment for properties acquired by the light subsidiary.

Traffic and Transportation

Trackless Trolleys Opposed

The International Railway, Buffalo, N. Y., may withdraw its petition asking permission to operate trackless trolleys on Bailey Avenue as a result of the opposition to the plan. At a recent hearing this method of transportation was strongly objected to on the ground that serious damage would be done to the pavement.

Herbert G. Tulley, president of the International Railway, and Thomas Penney, attorney for the company, appeared at the hearing in support of the petition. Mr. Tulley said that he wanted the experiment tried until January, 1923, but he would not guarantee the property owners against damage. He said further that it was for the purpose of supplying some kind of service in the northeastern section of the city that he wanted to try the trackless trolley.

Mr. Penny declared that if the people were averse to the plan the petition would be withdrawn. The Council decided to defer action on the matter until Sept. 9.

Traffic Laws Must Be Observed

Traffic congestion has become one of the biggest problems that is facing the Dallas (Tex.) Railway. The Dallas Safety Council, which was organized several months ago, is co-operating with the railway and has suggested a rearrangement of the tracks in the east section of the business district. The city of Dallas has the backing of the railway and the Council in the matter of enforcing traffic rules as a means of reducing accidents.

The city, through the chief of police, recently requested the railway to instruct motormen to stop their cars so that the rear doors would open on the safety zones that have been lined off in the business district, and also that when the doors of cars are once closed and the motorman is signalled to go, the car be not stopped to let any other person board it or for other reasons except grave emergency. The Council has been waging an intensive campaign against reckless auto driving. It announced that one of the first evils to be eliminated is the passing of street cars by autos while the cars are discharging or taking on passengers.

St. Paul Fare Hearing Deferred

After a morning hearing before the Minnesota Railroad Warehouse Commission on July 28 the application of the St. Paul City Railway for an emergency fare of 7 cents and four tokens for a quarter, postponement was allowed to Aug. 23, the day set for the postponed hearing of the Minneapolis Street Railway's application for a similar emergency rate. Both cities now have a 6-cent rate.

The postponement was made on plea of Corporation Counsel Arthur E. Nelson that the city wanted time to analyze the company's exhibits and to prepare a brief. The counsel had already attacked the validity of the law, which was passed by the 1921 Legislature placing the rate-making power for electric railways in the commission. If the commission grants the rate this attack will be taken into the courts for determination of the constitutionality of the law.

E. W. Bemis is the expert retained by the city to support its side of the fare controversy. Mention of the postponement of the Minneapolis Street Railway's case was made in the ELECTRIC RAILWAY JOURNAL, issue of Aug. 6.

Points Before Court in Louisville Case

The City Attorney of Louisville, Ky., has announced the questions which have been certified to the Supreme Court of the United States by the Circuit Court of Appeals in the case of the City of Louisville in its appeal from the injunction obtained by the Louisville Railway restraining the city from interfering with it in the collection of 7-cent fares. According to him they are:

1. Whether the acts of the Kentucky Legislature prior to the present constitution gave the city power to contract for a rate of fare.
2. Whether the consolidation of the companies in 1890 abrogated the contract.
3. Whether the acceptance of the present constitution by the Louisville Railway abrogated the contract.

Attorney Lawton stated that these three questions will be certified to the Supreme Court as soon as it convenes in October. The questions other than those certified to the Supreme Court will be passed on by the Circuit Court.

Everybody concerned appears to be very well pleased with the action of the Circuit Court of Appeals in certifying to the United States Supreme Court the questions involved in the 7-cent fare suit of the city. It is pointed out that the case would have gone to the Supreme Court in any event and that by the action of the Circuit Court decision will be rendered more promptly and the procedure will be less expensive.

In the meantime the company continues to collect 7-cent fares and is issuing rebate slips for the additional 2 cents. It is anticipated that so far as the company is concerned it will benefit materially in earnings, even if the decision is against it.

A local newspaper has taken up the cudgels in defense of the railway, declaring:

> If the city should finally win, all those who will have paid 7 cents and have no means of recovery will remember that machine politics at the City Hall threw into the courts a matter that proper city administration should have handled in an administrative way. If the company should finally win, a way out will have been shown to all utilities subjected to political persecution.

Routes of New Five-Cent Lines Announced

Edward Dana, general manager of the Boston (Mass.) Elevated Railway, has announced that additional experimental districts with 5-cent local fares, without transfer privileges, will be operated commencing Aug. 13. In Charlestown, all surface cars will be operated to Brattle Street station, it is stated, the local 5-cent fare to be collected pay-enter inbound and pay-leave outbound. Ten-cent fares will be collected from passengers transferring to elevated or Haymarket Square subway stations.

In Cambridge, surface cars operated to the Harvard Square subway station, lower level, will be run pay-leave inbound and pay-enter outbound. Local fares will be 5 cents, without transfer privilege. Inbound 10-cent through fares will be collected at Harvard Square subway station.

Dorchester inbound passengers riding to Andrew Square, Eggleston Square or Dudley Street, east loop or lower level, will pay 10-cent fare, and if alighting before arrival at the station will be entitled to a return coupon, good on outbound cars only on the date issued and the next day. Outbound 5-cent local fare or return coupon will be collected without privilege of transfer.

No change will be made on night and early morning cars.

Eight Cents in Birmingham

Eight-cent fares with a 2-cent transfer charge were granted the Birmingham Railway, Light & Power Company by the Alabama Public Service Commission in an order made public on July 31. The increased fares took effect on Aug. 2.

Plans for a fight against the increased rates granted by the Public Service Commission and an attack upon the constitutionality of the Public Utilities Act of the last Legislature of Alabama, which gives the Public Service Commission complete and exclusive control of the rates charged by all public utilities, are being discussed by the City Commission of Birmingham.

Tickets, according to the terms of the order of the commission, are being sold at a rate of fifteen for $1, or at 6⅔ cents each for a minimum of fifteen tickets. Stations for the sale of these tickets have been established by the company throughout the business district, and the first day of the sale several thousand people purchased tickets. By the use of tickets, where no transfer is made, regular riders secure a reduction of one-third of a cent a ride under the new rates, a 7-cent fare having been in effect for several months.

The 2-cent transfer charge applies on all transfers except from several lines which are in effect extensions of main lines. In these specific cases the transfers are issued without charge, and riders are entitled to a further transfer to other lines on the payment of the regular 2-cent charge.

Reduced Rates to Win Patrons

Announcement has been made of a restoration of reduced round-trip fares over a large portion of the Oregon Electric Railway lines in the Willamette Valley, and on the Spokane, Portland & Seattle line to lower Columbia River points. The new schedule is aimed at competing auto-bus lines and has been established in an effort to restore the passenger traffic to its former basis. The new rates, which include one-day round-trip fares and week-end round-trip fares, became effective July 14 and July 16 respectively. They have been announced to expire Sept. 30, 1921, unless cancelled or extended.

The new rates for the week-end round-trip tickets are approximately 25 per cent lower than the present rates. The one-day round-trip tickets are 15 per cent under the present rate. The new rates are for round trips only and have no effect upon one-way service.

"Pull Together" Campaign Successful

"Let's Pull Together," is the slogan in bold face type on cards recently handed to passengers on lines out of Camden by the conductors in the employ of the Public Service Railway. The appeal continues with:

Boost for better car service.
We appreciate your patronage and support.
We want to give you the best trolley service that is possible.
We conductors and motormen are anxious to please you.
We want better feeling and closer understanding between you and us.
We want to ask you for suggestions as to how we can serve you better.
We want to send you from time to time statements regarding our plans.
We want the interest and good will of our car riders.

An urgent request follows for passengers to sign the cards and return them to a member of the crew.

The effort to enlist the co-operation of patrons has resulted in gratifying response. Up to Aug 3 9,524 names with addresses were turned in and many helpful comments were made. It is interesting to note that approximately 85 per cent of the persons who responded to the company's invitation lived in New Jersey and about one-third of these came from Camden. Most of the other persons signing cards lived in Philadelphia and other places in Pennsylvania. Only four signers made any complaint about the rate of fare. Some of the remarks were commendatory.

Long Distance Limited Service Planned

The interurban service from Fort Wayne, Ind., is to be augmented by the establishment of the longest distance limited service in the country in a short time. The Wabash Valley flyer, which operates between Fort Wayne and Indianapolis, will be extended to take in Lima, Ohio, making a complete interstate run on limited time.

The route within a short time, officials say, will continue to Cleveland, Ohio, the present schedule being altered to make all connections. This will make Fort Wayne one of the leading traction centers of the country. The new line will be the only direct route connecting the Ohio cities and the Indiana capital. It is planned to establish the Lima-Cleveland service by Oct. 1.

The Lima road of the Ohio Electric Railway, under the receivership of Henry C. Paul, Fort Wayne, has been improved financially and physically. The Indiana Service Corporation is leasing part of the road from the receiver.

Seattle Confident in Fight Against Jitneys

Following the decision of the State Supreme Court, in which the rights of the city to ban the jitneys from the street were upheld, Superintendent of Utilities Carl H. Reeves issued an order forbidding the operation of any jitneys in Seattle. From this ruling sixty-five drivers are protected as participants in the McGlothern suit. This action covers a petition for rehearing of the jitney case, in which a temporary injunction, until Aug. 20, has been issued. Forty-three other jitney drivers have been allowed to join the sixty-five now protected, but they will not be protected by the injunction that affects the original sixty-five.

Since the order by Superintendent Reeves, one jitney driver has been arrested and fined $25 for operating without a permit, and in the case of seventeen others arrested judgment has been suspended at the request of W. B. Crawford, attorney for the Sound Transit Company, the organization of drivers. Mr. Crawford contends that the men under arrest are entitled to the thirty-day immunity granted by the injunction to Mr. McGlothern and others.

In a court order issued by Chief Justice Fullerton of the Supreme Court the forty-three drivers are permitted to join with the original sixty-five in filing a petition for a rehearing and a motion for modification of the court order issued by the Supreme Court on July 22.

About 120 jitneys have been barred from the streets by the order of Mr. Reeves. The ousting of the jitneys is believed by city officials to be the beginning of the end of the city's long fight to prevent the jitneys from competing with the Municipal Railway.

Several applications have been filed with the City Council for permits to operate 5-cent "feeder line jitneys" from the end of the railway lines. Mr. Reeves favors granting such feeder line permits in reasonable numbers.

Suburban Fares Reduced.—E. G. Shoup of the Peninsular Railway, San Jose, Cal., recently announced lower fares to the suburbs. The cuts are from San Jose to Los Gatos, round trip from 52 cents to 40 cents; San Jose to Campbell from 30 cents to 24 cents; from San Jose to Saratoga from 52 cents to 40 cents.

Court Reverses Itself

Emergency Rate Allowed In Evening Rescinded Next Morning—Everybody Wondering

Judge John Rellstab of the United States Court at Trenton, N. J., issued an order on the afternoon of Aug. 9 authorizing the Public Service Railway to increase its fare from 7 to 8 cents, with 2 cents for a transfer. On the morning of Aug. 10 the judge rescinded that part of his order permitting the increase to become effective.

Judge Rellstab's latest order states that "after further reflection upon the consideration of the authorities and in view that an early date for the hearing has been set in this case, so much of the rule to show cause which authorizes the company to increase its fares is vacated."

Application for a preliminary injunction to restrain the Public Utility Commission from interfering with the collection of a rate of fare greater than the 7-cent rate with 2 cents for transfers authorized by the commission was made to Judge Rellstab by the Public Service Railway on Aug. 9 under the provisions of an act of Congress passed in 1911.

Counsel for the company convinced Judge Rellstab that a condition existed which would result in confiscation of the company's property, and the advanced rate was granted, to become effective when the company had filed stipulations providing for a refund of the excess fare in the event that the appeal was finally determined so as to provide for a rate of fare less than 8 cents.

The recital of the bill by the railway is in a large measure a reiteration of statements already made before the Public Utilities Commission and the courts in previous rate cases. Statements of the commission that the rate allowed by the board will provide a 7 per cent return on the value of the company's property are branded in the bill as palpably incorrect.

Under Section 266 of the Federal Judiciary Act three judges must hear the appeal. The date has been set as Aug. 18 and Judge Rellstab has selected Judge J. W. Davis of New Jersey and Victor Wooley of the Delaware Circuit Court to sit with him.

Governor Edwards said that it was difficult for him to understand why the railway did not exhaust its logical resources in the State before taking its case to the Federal Courts.

Counsel for the New Jersey Auto Bus Owners' Association said that the only solution was to let the railway charge all it desired and let the people choose between it and the jitneys.

The commissioners were away from the State on a short vacation when the court announced its ruling. Mr. Herrmann, counsel for the commission, said, however, that from the little information he had, he doubted the legality of Judge Rellstab's act. This statement by Mr. Herrmann was made before the supplemental order of the court had been announced.

24,343,493 Jitney Passengers in Newark in Six Months

During the first half of this year the jitneys in Newark, N. J., carried 24,343,493 passengers, compared with 19,625,797 for the first half of 1920. The report of the Department of Revenues and Finance disclosed that jitney owners collected fares aggregating $1,217,171 this year against $981,289 for a similar period last year. The figures show that approximately the same number of buses were operated during each of the competitive periods.

Wheeling Company Acts Against Buses

Exciting scenes resulted on July 30 when C. P. Billings, general manager of the Wheeling Traction Company, had warrants issued for the drivers of the buses operating between Wheeling and Bellaire, Ohio, and Martins Ferry, Ohio. Mr. Billings charged the operators of the buses with violating the new state traffic ordinance by failure to pay license. The drivers were arrested, and after being freed on bond the men ran the buses, giving free rides. It later developed, however, that the statute under which the arrests were made did not become effective until Aug. 9.

Mobs gathered where the drivers were arrested and threatened the constable making the arrests. Later, at Aetnaville, Ohio, parts of the railway tracks were torn up, and in Martins Ferry, just above Aetnaville, the tracks were greased. The traction system was tied up.

There was a riot when Mr. Billings appeared in Bridgeport in response to reports street cars were being interfered with. So threatening did the attitude become against him that the police felt called upon to protect him from the mob.

The trouble was the climax of the fight between the traction company and the bus lines which are springing up on all sides in competition with the trolley. Recently the Wheeling City Council passed an ordinance restricting the bus lines.

Jitney Measure Modified—Property Consents Now Necessary

The first ordinance regulating jitney traffic in Kansas City, Mo., became effective on April 16. It prohibited jitneys from using streets on which street cars operated. The second regulatory ordinance was passed by the City Council on July 11, was signed by the Mayor on July 13. It becomes effective on Aug. 12. This second ordinance represents a response of the city to the demands of the public that consent of property owners be secured before jitney routes are established.

The new ordinance provides that written consent of a majority of front feet property owners on proposed jitney routes shall be filed before such proposed route can be established. The majority is of front feet, and the property owners signing must reside in Kansas City. There are other restrictions on routing. A route so established may be maintained for one year; the license continuing unless withdrawals of consent by property owners shall reduce the consent-footage below a majority.

The type and number of jitneys to be operated are under control of the inspector of jitneys—no more than those designated in the application and approved, to be allowed on any route.

The new measure is in the nature of an amendment to the previous ordinance and continues in effect the ruling that autos for public hire in so-called jitney service shall not be operated on streets where railway facilities are provided.

Commission Issues Jitney Certificate

The first jitney certificate was issued by the Maine Public Utilities Commission recently to Packard & Dunbar for the operation of a bus line between Grennville and Lily Bay, and from Greenville to Bangor. By a new law the Public Utilities Commission took over the supervision of the jitney, which is in charge of G. R. Armstrong, the commission's expert electrician.

According to rules and regulations adopted, time and fare schedules must be posted in the bus, and passenger capacity cannot be exceeded. The fare between any two points must not be less than the fare charged by any steam or electric carrier. Licenses can be revocated at any time after a hearing when it is shown that the public good no longer requires the jitney service or when rules have been violated.

Jitneys Banned in Albany

Pending a decision on the application of the United Traction Company, Albany, N. Y., for a permanent injunction, jitney operators have been restrained from competing with the railway. The order curbing the jitneys was made by Supreme Court Justice Harold J. Hinman of the Third Judicial District, New York State. It specifies by name 211 jitney men who have been running buses for hire without securing certificates of "necessity and convenience" from the Public Service Commission. The order is returnable on Sept. 10, when the railway case will be argued. The company has until Aug. 19 to serve the injunction. Those not mentioned in the injunction may continue the operation of buses until enjoined.

The company contends through H. B. Weatherwax, the vice-president, that jitneys have been operating in Albany, Troy, Watervliet and Cohoes in violation of Section 26 of the transportation law. The buses have been doing a good business in the cities affected by the strike of the union employees of the railway now in its seventh month. The company's cars are now being operated by non-union employees.

Low Fare Experiment Abandoned

A low rate of fare for a limited zone in the down-town district of the city does not stimulate the riding habit. That is the conclusion of officials of the Cleveland (Ohio) Railway, who on Aug. 8 discontinued the experiment of charging only 3 cents cash for fare, with a 2½-cent ticket rate, in the down-town part of Cleveland. The plan had a thirty-day test, but proved a failure. Instead of stimulating the riding habit and thus bolstering up the falling receipts of the company, the plan turned out to be a losing venture.

Starting on Aug. 9, a ride in the down-town section of Cleveland costs the same as a ride any place else; namely, 6 cents and a 1-cent charge for transfer, with nine tickets for 50 cents and 1 cent for each transfer.

The failure of the plan was discouraging to officials of the railway and to Fielder Sanders, city street railway commissioner, who had hoped that it would mean increased revenue to the company.

In commenting upon the failure of the plan, the Cleveland Plain Dealer on Aug. 7 said in an editorial:

> The down-town low fare experiment has proved a failure and comes to an end tomorrow. The idea was that if people could ride within a restricted area in the congested section at a reduced rate fewer would walk these short distances and a profitable short haul business might be built up. But the public failed to respond, people continue to walk about the down-town section and the company finds the experiment a losing one.
>
> While the general results of the test are not to be questioned they are disappointing in their relation to two car lines confined wholly to the congested area. There should be some plan possible for keeping a reduced fare in force on the Union station line and the pier line.
>
> Here are the cars with which Cleveland meets its visitors. Six cents seems unnecessarily high for a ride from the station to the Square or to one of the downtown hotels. Six cents is too much to charge passengers riding from the foot of East Ninth Street to the Square. Such a charge gives the stranger an unpleasant impression that the city is inhospitable.
>
> It is taken for granted, of course, that with a reduced fare on these two lines no transfers could be issued. The average traveler from station to hotel wants no transfer. Those who do wish to take some other line from the Square would not object to paying the higher fare and the transfer charge in addition.
>
> The pier line used to carry passengers for 1 cent. That was probably too low, but somewhere between 1 cent and the present 6-cent charge it ought to be possible to find a figure at which passengers could be carried at a profit reasonable but not excessive. The same considerations hold for the Union station line.

Six Cents Predominant Fare in Ohio

Figures compiled by the Ohio Committee on Public Utility Information on fares in effect in twenty-three Ohio cities having a population of more than 14,000 each show that 6 cents is the prevailing car fare in that State.

Of the twenty-three cities eleven have a 6-cent fare, while four charge 7 and four 8 cents. In Cincinnati and Youngstown a 9-cent rate is in effect, while Tiffin charges 10 cents.

A report of the Ohio Public Utilities Commission recently published showed that the interurban railways of Ohio operated at a loss during 1920.

Decision Reversed in Connecticut Jitney Case

Judge Edwin S. Thomas of the Federal Court at New Haven rescinded on Aug. 8 his restraining order of July 30 and gave notice that the jitneys would have to cease operating at 12 o'clock that night. The ruling of the court is that the jitneys must not attempt to operate again until the Federal Court of three judges had passed upon the application of the jitney men for an interlocutory injunction.

The court pointed out that there was no good claim to the theory of the jitney men that the court having issued a restraining order has not the power to vacate or modify its ruling. The court found that the rights of the plaintiff as set up were not free from doubt. As to the main issue, namely, the constitutionality of the state law, Judge Thomas left that to the higher court, which is to sit at New Haven on Aug. 16. The court was not convinced that the injury to the jitneymen would be irreparable if they were compelled to stop operating.

Judge Thomas had on July 30 issued an injunction which temporarily terminated the jitney ban and prevented the police from making arrests. In this decision Judge Thomas overruled Judge Keeler of the Superior Court, who had previously refused to issue an injunction to prevent the police from interfering with the jitneymen.

George D. Watrous, who appeared in behalf of the Connecticut Company, at a hearing on Aug. 5, pointed out that the company was losing from $6,000 to $10,000 daily as the result of jitney competition.

Transportation News Notes

Authorize Ten-Cent Rate.—The State Railroad Commission of Montana has granted the application of the Butte Electric Railway for a cash fare of 10 cents. Commutation tickets at 6¼ cents in books of any multiple of four will be provided under the board's ruling.

Pennsylvania Line Cuts Rates.—The Pittsburgh, Harmony, Butler & New Castle Railway, Pittsburgh, Pa., has filed notice with the Public Service Commission of decrease in its rate for agricultural and other lime and also for various kinds of shipments in smaller lots.

Seven-Cent Fare Only Allowed.—The City Council of Somerset, Ky., has authorized the Kentucky Utilities Company to collect a 7-cent fare in that city. The company asked for a 10-cent fare, stating that it could not operate for less. The company has not announced whether it will accept the Council's offer and resume the operation of cars.

Interurban Rates Advanced. — Cash fare, round-trip and commutation rates on the interurban lines of the Denver (Col.) Tramway were increased 20 per cent on Aug. 1 by authority of the Colorado Public Utilities Commission. The order further provides for a minimum cash fare of 10 cents and a minimum round-trip fare of 25 cents.

Freight Service Established.—A new traction freight service between Fort Wayne, Ind., and Lima, Ohio, was started by the Indiana Service Corporation on Aug. 1. The object of the new service is to enable Fort Wayne shippers to send freight over this line one day and have it distributed out of Lima to western Ohio points the next day.

Première of Snapshots.—An interesting illustrated newspaper "snapshots" giving sidelights on the employees during the busy day and in off moments is being published by the Georgia Railway & Power Company, Atlanta, Ga. It appeared for the first time on July 23 and will hereafter be published on the second and fourth Saturdays of each month.

Wanted — Uniforms to Press. — To co-operate with the men in maintaining neat appearances the Los Angeles (Cal.) Railway will operate its own uniform department in the near future. "Two Bells," the official publication of the railway, announces that Clayton C. Beers will be appointed superintendent of this department. A feature of special interest will be the cleaning and pressing service.

"Partners" To Appear Semi-Monthly. —*Partners*, the official publication of the Dallas (Tex.) Railway, has grown in size and in numbers. It was announced in the Aug. 1 issue that *Partners* would be published semi-monthly instead of monthly "so that employees might have the news while it is hot." The editor announces that the former policy will be continued; i.e., constructive criticism and descriptive articles. New features will be added.

Lower Rates in Effect.—A reduced fare schedule on the Connecticut Company's line between Rockville and Hartford went into effect recently. The new fare will be 30 cents while the interurban line rate will remain at 40 cents. It is believed that the Common Council of Rockville will secure permission for a 20-cent fare between Rockville and Crystal Lake. The present fare is 30 cents.

Prepared to Submit Data.—Armed with information regarding legislation and regulation of jitney traffic in western cities, members of the Indianapolis City Council who accompanied the jitney junketing party have returned prepared to submit to the Council recommendations designed to clear up the jitney situations in Indianapolis. Investigation of conditions was made in Sioux City and Des Moines, Ia., and Kansas City, Mo.

City Fights Fare Rise.—Charles L. Jewett, head of the city law department of New Albany, Ind., appeared before the Interstate Commerce Commission in Washington to submit oral arguments in protest of the advance in fare from 7 cents to 10 cents, effective Oct. 1, by the Louisville & Northern Railway & Light Company, which operates the "Daisy" line between New Albany and Louisville. Last January the commission made a tentative award of an 8-cent commutation fare and a 10-cent cash fare, whereupon the company filed exceptions.

Allows Eight-Cent Rate. — Under a recent ruling of the Public Service Commission the Hudson Valley Railway has been authorized to put an 8-cent fare into effect between points in and through each zone except in Troy and in the urban zones of the cities of Saratoga Springs and Glens Falls. The company will also be permitted to increase the twelve and twenty-four-trip commutation tickets and forty-ride commutation ticket books good between Hudson Falls and Schuylerville, Glens Falls and Thomson and Glens Falls and Wilton may be advanced from $10 to $15.

Surface Lines Hearing Deferred.—Hearing of the Chicago (Ill.) Surface Lines fare case has been deferred until Sept. 14. At a session before the Illinois Commerce Commission on July 27 State Attorney Crowe renewed his demand for the corporate books of the companies. Counsel for the Surface Lines said he recognized the authority of the commission to examine all books, but he objected to anyone else claiming this as a right. It was agreed that this matter would be taken up when the hearings begin.

Would Couple Wages With Fares.—As soon as the announcement had been made that the wages of the trainmen and other employees of the International Railway, Buffalo, N. Y., would be reduced, Frank C. Perkins, commissioner of public affairs, asked the City Council to apply to the Public Service Commission for a rehearing on the fare case. Corporation Counsel Rann opposed such a move, holding the time was inopportune for a rate case and that the city might lose such a proceeding in view of the financial condition of the railway. The reduction in wages was noted in last week's issue.

Government Utilizes Traction Cars. —Traction cars of the Louisville & Southern Indiana Company and the Louisville & Northern Lighting & Power Company are being utilized for transporting the United States mails, as the result of an agreement which has just gone into effect with the Post Office Department. The transportation of the mails has hitherto rested solely with steam trains between Louisville, New Albany and Jeffersonville. The new arrangement offers a speedier service, cutting down the time by a half day. Mail from New Albany to Indianapolis will be carried to Jeffersonville by electric railway cars in time to catch the afternoon train to Indianapolis.

Legal Notes

CALIFORNIA—*Assault by Employee on Passenger Who Had Left the Car.*

A passenger who had had an altercation with the conductor over the question of a transfer was assaulted by the motorman after he had left the car. The court held that it was not a prerequisite to the right to recover that the passenger relation should be established, provided the employee was acting with the scope of his employment. [Galloway vs. United Railroads, 197 Pacific Rep., 663.]

FEDERAL DISTRICT COURT—*Carrier of Passengers Must Pay for Examination of Baggage on Sundays and Holidays*

The ruling of the Treasury Department requiring baggage brought in by trolley car passengers on Sundays and holidays to be impounded for inspection on the next working day, unless the trolley company pays the extra compensation for inspection, is a reasonable exercise of the department's power to make regulations for the enforcement of Rev. St. Sec. 3100, and the court cannot substitute its judgment for his. [International Railway vs. Davidson, Collector of Customs, 271 Federal Rep., 313.]

FEDERAL SUPREME COURT—*A State May Tax a Railway Franchise of a Company Engaged in Interstate Commerce.*

A company owned 0.865 mile of track on the Eads bridge over the Mississippi and the Missouri State Board of Equalization taxed the 0.346 mile of track in the state on the basis of value per mile of $537,630, made up as follows: Rolling stock, poles, wires and cash, $32,630; roadbed, $5,000, and "all other property," $500,000. The company claimed this last item consisted of its franchise to conduct interstate passenger traffic and that such taxation was unconstitutional. The court held, however, that this value was not merely a franchise to do an interstate business, but the company's exclusive right to operate over the bridge, as well as the connections which it had with railways, at the end of the bridge, and as the company was capitalized at $1,000,000 and paid a return thereon, it was proper for the state to impose an ordinary property tax upon property having a situs within its territory. [St. Louis & East St. Louis Electric Railway vs. State of Missouri, 41 Supreme Court Rep., 488.]

GEORGIA—*Rule of Comparative Negligenee Stated.*

The law in Georgia gives a right of recovery to an injured party although his own negligence may have been a contributing cause of the injury, provided the defendant's negligence constituting the proximate cause of the injury is greater than that of the plaintiff; the damage to be diminished in accordance with the plaintiff's contributing negligence. [Fairburn and Atlanta Railway & Electric Company vs. Latham, 107 Southeastern Rep., 88, and Georgia Railway & Power Company vs. Reid, 107 Southeastern Rep., 100.]

INDIANA—*The Driver of a School Wagon is an Agent of the Parent So That His Negilgenee Will Be a Bar to Recovery for a Child's Death at a Crossing.*

The driver of the wagon, which is furnished by the township trustees to transport children to school under a statute which requires the trustees to furnish a wagon but does not require a parent to avail himself of the means so furnished, is the agent of a parent who intrusts his child to the driver for transportation. Hence the contributory negligence of the driver in crossing a railway track bars the parent's right to recover for the child's death from injury in a collision. [Union Traction Company of Indiana vs. Gault, 130 Northeastern Rep., 136.]

IOWA—*Alleged Oral Promises and Representations Held Not to Invalidate Contraet for Right-of-Way.*

A property owner agreed to convey to the public for highway purposes 10 ft. in width of his lot to enable an electric railway company to build its tracks, but after the road was constructed he claimed that the oral promises of the company's agent in regard to the type of ballast to be used, stops to be made by the cars, etc., were not carried out, and that the contract should be declared invalid. The court held, however, that definite contracts should not be treated lightly, and that the claims made did not constitute evidence of fraud. [Smith vs. Waterloo C. F. & N. Ry., 182 Northwest Rep., 890.]

MASSACHUSETTS—*Failure of Conductor to Assist Passenger Held Not Negligence.*

The failure of the conductor to assist a woman passenger who had a child in her arms to alight from the car does not, in the absence of any showing of a rule or custom in that respect or of a request by the passenger for assistance, show negligence authorizing recovery for injuries caused by the passenger's falling. [Gatchell vs. Boston Elevated Railway, 130 Northeastern Rep., 94.]

MASSACHUSETTS—*A Truck Owner Who Uses Part of Street Reserved for Electric Cars Must Protect Himself Against Collision.*

A motor truck in winter, when there was deep snow on the highway, was traveling on the track of the electric railway which though on the street was on its southerly side and separated from the traveled way by a guard fence and was not paved. The truck broke down and while it was thus stalled a car ran into it. There was no red light on the back of the truck. Two employees of the railway company who were injured brought suit for damages against the truck owner. The company also sued for damages to its car and the Supreme Court upheld the verdicts for the plaintiffs in all three suits. [Bay State Street Railway vs. McCormick, 129 Northeastern Rep., 598.]

MINNESOTA—*Release May Be Voided for Mutual Mistake.*

A release from all damages arising from an accident may be voided if there is clear proof of mutual mistake as to an unknown injury caused by the accident, existing at the time of the settlement and not intended to be included therein. [Nygard vs. Minneapolis St. Ry. Co., 179 Northwestern Rep., 642.]

NEW YORK—*Complaint by Railway Held to State Cause for Injunction Against Operation of Motor Bus Routes.*

Complaint by a street railroad company in New York City to enjoin the operation of motor bus routes attempted to be authorized by the board of estimate and apportionment, was held to state a cause of action for injunction. [Brooklyn City Railway vs. Whalen, 229 New York Supp., 570.]

NEW YORK—*Right of Street Railway to Charge Two Fares Not Affected by Acts of Lessee, Annexation or Consolidation.*

A street railway, on termination of its lease of a line on which it had right under its charters to charge two fares, resumes possession with such right unaffected by the fact that its lessee had voluntarily charged only one fare thereon. If originally it extended through a city and a town, and under its franchises had a right to collect a 5-cent fare in each, such right was not affected by the annexation of the town to the city, or by the subsequent consolidation of the city with another city. [People ex rel. Brooklyn City R. Co. vs. Nixon et al., 184 N. Y. Supplement, 369.]

WISCONSIN—*Power of Cities to Require Railways Operating Over Right-of-Way to Move Tracks Is Limited.*

An interurban railway which owns the portion of the street on which its tracks are situated, subject to the right of the public to use it for highway purposes, is in a different position from a company operating on a public highway. To require it to move from its present location to other property on which it has no property rights would amount to taking away the property right that it now has. Cities under the general charter laws, section 925-52, subdivision 31, or 925-52, subdivision 51, do not have the power to require a company to move its track under such conditions. [State ex rel. City of West Allis vs. Milwaukee Light, Heat & Traction Co., 180 Northwestern Rep., 938.]

Personal Mention

I. C. C. and Shipping Board Have Joint Committee

Commissioner Charles C. McChord has been selected chairman of the joint committee composed of three members of the Interstate Commerce Commission and the United States Shipping Board which has been appointed for the purpose of providing a liason between the two governmental bodies and considering overlapping duties of the board and the commission due to amendments to the Interstate Commerce Act and the passage of the Merchant Marine Act.

The joint committee is at present considering the question of a uniform through export bill of lading but so far no final conclusions on the matter have been reached. Chairman McChord said on July 30 that this subject will be taken up again at another meeting which he plans to call later, although no definite date for it has been determined upon.

Members of the committee in addition to Chairman McChord are Commissioners Hall and Esch representing the I. C. C. and Commissioners Edward C. Plummer, Frederick I. Thompson, and Meyer Lissner representing the shipping board.

Changes on Kankakee Interurban

Edward J. Blair, formerly assistant to the president, Chicago & Interurban Traction Company, which connects Chicago with Kankakee, Ill., was elected vice-president of the company at the meeting of the directors on July 22. W. W. O'Toole, formerly assistant auditor, was elected auditor. A. G. Nelson was made assistant secretary and assistant treasurer Other officers re-elected were Samuel Insull, chairman of the board of directors, Britton I. Budd, president, and W. W. Crawford, secretary and treasurer. Samuel Insull and W. W. Crawford were elected directors for a term of three years at a meeting of the stockholders held on the same day.

C. D. Emmons, president of the United Railways & Electric Company, Baltimore, Md., and H. B. Flowers, second vice-president and general manager of that company, expect to sail, on Aug. 13, for Europe, where they will study more particularly the use of trackless trolleys and the bus.

J. G. Phillips has resigned as general superintendent of the Mobile Light & Railroad Company, Mobile, Ala. Mr. Phillips was previously general manager of the Gary (Ind.) Street Railway. Prior to that connection he was engaged on valuation work with Ford, Bacon & Davis, engineers. At one time he was connected with the Hudson Valley Railway, Glens Falls, N. Y., as superintendent of rolling stock and later as assistant general manager. Mr. Phillips has not announced his future plans.

Mr. Van Ness Made Manager

Well-Known Electrical Engineer Will Direct Middle West Interurban for Receivers

The Cincinnati, Lawrenceburg & Aurora Electric Street Railroad, Cincinnati, Ohio, has undergone a reorganization of its personnel to the extent of the officials in charge of operations. L. G. Van Ness, one of the best-known electrical engineers in the Middle West, has been appointed general manager for the receivers, Edgar Stark and C. E. Hooven. Mr. Van Ness succeeds E. M. Gumpf, who resigned the general managership of the traction company some time ago, but who remained on the job until his successor took active charge. The railway has been in the hands of a receiver since 1913, but was apparently emerging from its financial troubles when the War Labor Board increased the pay of interurban and steam railroad employees.

F. E. Nichols, for many years connected with the General Electric Company, has been put in charge of operation of the road under the supervision of Mr. Van Ness, who has been a consulting engineer in Cincinnati for the last three years, with an office in the Union Trust Building.

Mr. Van Ness was graduated from the University of Wisconsin in 1896, and after leaving college served two years in the manufacturing field. From 1898 until 1904 he was employed as a consulting engineer by Emerson McMillan & Company, New York, operating the American Light & Traction Company. After severing his connection with this corporation, Mr. Van Ness joined the engineering staff of the North American Company.

During the year 1906, Mr. Van Ness went to Memphis, Tenn., where he supervised the construction of a light and power plant and remained on the grounds until the plant was in operation. He went to Cincinnati in the fall of 1918 and opened an office in the Union Trust Building.

Mr. Nichols is a graduate of the University of Kansas, and was an engineer in the employ of the General Electric Company from 1902 until last June.

Since Mr. Van Ness has taken charge the Cincinnati, Lawrenceburg & Aurora line has not undergone any material change in operation, but the new management has several plans under consideration to increase the earnings of the company, among them being the installation of a freight package system.

T. T. Fitzpatrick, who has been connected with the Monongahela Power & Railway Company, Fairmont, W. Va., for some time, has been appointed superintendent of transportation on the Clarksburg division. He succeeds Carl B. Johnson, resigned.

A. W. Buckley has been appointed superintendent of substations on the Chicago, South Bend & Northern Indiana Railway, South Bend, Ind. He has been with the company since Dec. 16, 1920. Before that Mr. Buckley was employed by the Indiana & Michigan Electric Company, South Bend, at the substations of that company which furnishes power for the Chicago, South Bend & Northern Indiana Railway.

Brigadier General George H. Harries, vice-president of H. M. Byllesby & Company, Chicago, Ill., who acted as chief of the allied commission in charge of prisoners of war in Germany after the armistice, has been decorated with the order of Leopold by the Belgian Ambassador, Baron deCartier, in recognition of his services in behalf of the Belgian prisoners. The ceremony took place on July 22, at the Belgian embassy in Washington in the presence of officers of the Belgian and American armies.

Obituary

Edward Carmin, engineer at the Union Traction Company's power plant in North Anderson, Ind., was shot and instantly killed recently by George Ewen of Summitville, who had been employed about the power plant as a laborer and had been discharged by Carmin.

George D. Munsing, for several years manager of the old Consumer's Electric & Street Railway, now the Tampa Electric Company, at Tampa, Fla., died in Red Bank, N. J. Mr. Munsing came to Tampa in 1895 and was there until 1902, serving under both the Consumer's Electric Street Railway and the Tampa Electric Company.

Hart A. Fisher, formerly of Joliet, brother of F. E. Fisher, general manager of the Chicago, Ottawa & Peoria Railway Company, Ottawa, Ill., and a constructor and operator of steam and electric railroads, died recently in Crockett, Texas. He came to Joliet in 1903 from Columbus, Ohio, where he had promoted and constructed three or four of the most successful interurban railways of that district. With his brother, F. E. Fisher, and his son, L. D. Fisher, he formed the Fisher Construction Company. This company promoted and built the Aurora, Plainfield & Joliet Railway and the Joliet & Eastern Railway. Prior to entering the field of electric railway development, Mr. Fisher was in steam railroad promotion and operation for many years. He was the builder of the Chicago, Peoria & St. Louis Railroad.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES BUSINESS ANNOUNCEMENTS

Improved Business Condition Coming

Credit Conditions Show Evidences of Improvement and Return to Normal Level Should Come Soon

The United States is practically through the period of violent business disturbance which began in May, 1920, according to a review of business conditions by the National Bank of Commerce in New York. "We will from time to time have visible evidences of the distressing conditions through which the country has been passing," the review continues, "but these occurrences should be regarded not as indices to forward conditions but as relating to the past. The changes which have taken place have not as yet been recognized by the business public for two main reasons. The period of normal midsummer dullness now at hand has obscured the certain evidences of improvement and thorough comprehension of credit conditions is lacking.

"Failure to recognize the passing of the period of insufficient credit has resulted from lack of recognition of the fact that for a long time the credit shortage has been apparent rather than real and due in large part to the unsatisfactory character of some of the risks offered. There is now no bank credit available for operations designed to hold prices at fictitious levels. Orderly organized marketing, if fair, succeeds, but attempts to hold prices above the levels determined by international supply and demand are certain eventually to fail.

"The main requisite for a return toward normal conditions is the will to try for business on a level where it can be had. The period of general liquidation of the raw material markets of the United States has passed. Recent declines are due to conditions of supply and demand in specific lines. This is a normal condition. Wholesale prices of many classes of manufactures have been fully deflated. This is not true in all lines, but recent cuts in the price of steel and widespread reductions in wages indicate that adjustment in wholesale prices will not be long delayed. Price stabilization is, therefore, not far ahead."

Electrification of the Japanese Railways

Japan intends electrifying the entire railroad system of the country, writes the ELECTRIC RAILWAY JOURNAL correspondent in Switzerland. A report from London is to the effect that German manufacturers of electrical machinery and appliances are already in the field endeavoring to secure orders. Of a total length of 12,000 km. of the Japanese railways only 95 km. have been electrified thus far. Work on the electrification of a line of 205 km. will be started at once. A large power station for this line is to be erected in the neighborhood of Yokohama and another one near Tokyo. The expenditure for these two stations will be about 60,000,000 yen. A special company has been formed for the purpose of financing the electrification of the railways.

Fewer Idle Cars

Freight cars temporarily out of service due to the business depression totaled 555,168 on July 23, according to reports just received from the railroads of the United States by the car service division of the American Railway Association. This is a reduction of approximately 10,000 since July 15. In reaching this total, the car service division takes into account the total number of cars now in excess of current freight requirements as well as the number of cars now awaiting repairs above 7 per cent of the total. Officials of that organization believe that this percentage, while higher than the accepted maximum of the pre-war period, probably represents a better standard for present comparisons due to the difficult conditions respecting labor and materials during the past three years.

The surplus cars on July 23 numbered 350,772, which was a reduction of 21,278 cars compared with the total on July 15. This reduction was due principally to the increased demand in the central Western region for grain cars. Surplus box cars totaled 119,442, which was a decrease of 16,191 compared with the earlier date, while surplus coal cars were reduced 5,049 to a total of 168,568.

Cars in need of repairs on July 15 totaled 365,092, or 15.9 per cent of the cars on line compared with 354,611 or 15.4 per cent on July 1. Allowing for 7 per cent being normal, cars in need of repairs above normal totaled 204,396, which added to the total surplus means 555,168 cars out of service because of business conditions.

Railroad Crossing Frogs Cheaper

A 15 per cent reduction in the price of manganese steel castings for Balkwill articulated cast manganese railroad crossings, effective after Aug. 1, has been made by the American Manganese Steel Company, who furnish the manganese castings to most of the railroad crossing makers of the United States. This is the second reduction this year, and it is hoped will stimulate buying badly needed crossings.

Jamaica Proposes to Electrify Railway

The government of the island of Jamaica proposes to borrow from $6,000,000 to $7,000,000, it is reported, for taking over the electric railway and lighting system of Kingston and for electrifying the government-owned Jamaica railway, which extends 127 miles. American manufacturers are preparing to submit bids on the project, funds for which will probably be obtained in London, it is stated.

Census Bureau Reports on Wire Production

Figures Are Based Upon Returns from 117 Establishments as Compared with 99 Establishments in 1914

A preliminary statement of the 1920 census of manufactures with respect to wire drawing mills has been prepared by the Bureau of the Census, Department of Commerce. It consists of a detailed statement of the quantities and values of the various products manufactured during the year 1919.

CENSUS BUREAU'S SUMMARY CONCERNING THE WIRE INDUSTRY—1919

	1919		1914	
	No. of Establishments	Value of Products	No. of Establishments	Value of Products
Total	117	$409,058,300	99	$172,600,500
Wire mills	66	162,151,200	54	81,841,000
Iron and steel rolling mills, wire departments	25	191,997,200	24	[illegible]
Brass and copper rolling mills, wire departments and other concerns	20	54,909,900	21	90,759,500
	Quantity	Value	Quantity	Value
Wire and manufactures of	.....	$401,376,400	.....	$166,999,900
Steel and iron	.....	264,778,000	.....	116,215,500
Plain wire, tons	2,508,890	.....	2,435,500	.....
For sale, tons	592,430	58,756,500	459,900	22,316,800
Consumed in works, tons	1,916,460	.....	1,975,600	.....
Galvanized wire, tons	922,970	.....		
For sale, tons	343,000	32,383,500		
Consumed in works, tons	579,970	.....	374,480	15,949,500
Other coated wire, tons	83,730	.....		
For sale, tons	49,925	5,257,700		
Consumed in works, tons	33,805	.....		
Bare wire, tons	193,370	.....	.....	.....
For sale, tons	161,660	68,011,300	84,920	26,206,000
Consumed in works, tons	31,710	.....	.....	.....
Rubber insulated cable, *tons	24,570	18,738,100		
Paper insulated cable, *tons	20,200	11,451,400	48,390	15,709,300
Insulated wire, *tons	29,470	15,216,700		
Brass wire, pounds	50,521,000	16,024,500	39,614,500	6,366,300

* Not including insulated wire and cable made in establishments purchasing the wire, value $84,216,900. Total production, 1919, rubber insulated cable, $39,386,900; paper insulated cable, $25,664,300; insulated wire, $64,571,900; aggregate, $129,623,100.

Rolling Stock

The Denver (Col.) Tramway advises that it is not in the market for purchase of additional rolling stock at this time, as was intimated in these columns in an item in the July 23 issue.

The Southwest Missouri Railroad, Webb City, Mo., has just placed an order for eight one-man safety cars with the National Safety Car & Equipment Company. The operating equipment will be furnished by the General Electric Company, and Cincinnati trucks will be used.

The West Penn Railways, Connellsville, Pa., is equipping several cars for use on various branches of the system. Five new 700-type cars are under construction for the Coke Region division and ten double-truck passenger cars for the McKeesport division. The bodies of these cars are being built by the Cincinnati Car Company. Five double-end type 200 cars are also being built for the Kittanning division, the first of which will be shipped about Aug. 10.

Massachusetts Northeastern Street Railway Company, Haverhill, Mass., advises that it has equipped all its cars with life guards and complete sander equipments. Twelve cars carry air-operated sanders and 133 have the mechanical type. Both the sanders and the life guards have been installed in accordance with the Department of Public Works order No. 300, it is stated.

Detroit (Mich.) Municipal Railway, mentioned in the issue of July 23 as ordering 100 Birney safety cars from J. G. Brill Company on May 4, states that delivery of twenty-five cars is to be made by Aug. 1; twenty-five more by Aug. 15; the third lot of twenty-five by Sept. 1, and the remained by Sept. 15. Half of the cars will be equipped with Westinghouse air brakes, DH-16, and half with General Electric brakes, CP-27. Fifty of the motors are likewise Westinghouse, No. 508 and the other fifty are General Electric, No. 264. Other equipment specified on the cars is the same as on the 100 safety cars previously described.

Track and Roadway

San Francisco-Oakland Terminal Railways, Oakland, Cal., is now engaged in the construction of 1,500 ft. of additional second track along Fourteenth Avenue. The track will be built with 70 lb. standard "T" rail. The cost is approximated at $15,300.

Hydro-Electric Power Commission, Ontario, Can., will have construction work on the railways in Windsor started within a month, the hydro-radial by-law having been passed.

Southern Indiana Gas & Electric Company, Evansville, Ind., is considering a proposal to move the tracks at Mesker Park in the western part of the city in order to facilitate the building of Little Cynthiana Road. The county commissioners have approved the plan.

New Brunswick Power Company, St. John, N. B., is considering the expenditure of $150,000 on track construction during the current year.

New York State Railways, Syracuse, N. Y., has agreed to do its share in the paving plan in Manlius Street, Cortland Avenue and Gifford Street. The railway's plea that it lacked the funds has held up this improvement for more than two years.

North Carolina Public Service Company, Salisbury, N. C., is relaying its tracks on Harrison Street from Main to Fulton Streets. The track was torn up to permit grading work.

Tulsa (Okla.) Street Railway, announces that from May 31, 1918, to May 31 of this year it expended $181,025 in extensions of lines, construction of carhouse and office building, double-tracking and installing new cars. Work is now in progress on a $10,000 addition to the company's shops and upon repairing and double-tracking the Kendall division at a cost of $40,000.

Brantford (Ont.) Municipal Railway, has received approval from the City Council for the proposed extensions in Eagle Place and the North Ward.

Scranton (Pa.) Railway, must move its tracks to the center of the street in Dupont according to a recent opinion handed down by Judge Woodward. This expense together with the paving of the road will cost the railway a considerable sum of money.

Knoxville Railway & Light Company, Knoxville, Tenn., is repairing and overhauling its line between Arlington and Fountain City. The president of the company has announced that a local construction company is doing extensive work for both the company and the city on the Burlington line, Park Street and the north end of Gay Street.

Nashville Railway & Light Company, Nashville, Tenn., will discuss with the councilmen and city representatives the possible extension of the Buena Vista line from Twenty Third Avenue and McDaniel Street beyond the end of the bridge over the Hyde's Ferry Pike in Bordeaux, a distance of 1¼ miles.

Power Houses, Shops and Buildings

Los Angeles (Cal.) Railway has received some of the electrical equipment for the new Vernon automatic substation and work has started on the foundation of the second substation, which will be located in Garvanza. The Vernon building will be 42 ft. by 52 ft. The 1,000-kw. synchronous converter to be installed is of Westinghouse design. The feeders and high-tension lines will cost an additional $20,000. It is planned to have power delivered Nov. 1.

Portland Railway, Light & Power Company, Portland, Ore., has applied to the federal power commission for a preliminary permit for a proposed future addition to its Oak Grove project on Oak Grove Creek near the mouth of the Clackamas River, in Clackamas County, Ore. The development contemplates the construction of a low diversion dam in the Clackamas River and a tunnel or canal 4 miles long connecting with the Oak Grove conduit.

Trade Notes

Robert S. Hammond, Pittsburgh district sales manager of Whiting Corporation, Harvey, Ill., manufacturer of cranes, foundry equipment and railroad specialties, has been transferred to the Chicago office in the same capacity.

The Consolidated Electric Lamp Company, Inc., Danvers, Mass., has acquired the business of the Chicago Electric Lamp Company and will conduct its business of lamp distribution from the factory offices at Danvers.

Pacific Clay Products Company, Los Angeles, Cal., will replace its plant at Los Nietos, Cal., for the manufacture of firebrick and other refractory products with a plant that will have an initial capacity of about 25,000 firebrick daily.

Morrison & Risman, Inc., jobber and dealer in new and used track equipment, has moved its New York City office to 26 Cortland Street, with R. S. Maddocks in charge. The company's main office is at Buffalo, N. Y., with district offices also at Pittsburgh and Philadelphia.

The Universal Crane Company, Cleveland, Ohio, announces that the Allied Machinery Corporation of America, 51 Chambers Street, New York City, has been appointed its foreign representative in all countries except the United States and Canada.

The Arrow Pump Company, with general sales offices in the Buhl Building, Detroit, announces that it is now prepared to manufacture centrifugal and other rotating types of pumps in which there will be incorporated a unique design of packing gland with ring oiling principle.

F. E. L. Whitesell has been appointed New England representative of the Railway & Industrial Engineering Company, Greensburg, Pa., with offices at 136 Federal Street, Boston. Mr. Whitesell has been in the company's sales department for a number of years.

The Triangle Conduit Company, Inc., 50 Columbia Heights, Brooklyn, N. Y., announces an organization change. Thomas H. Bibber becomes general manager of the company's Western business. Mr. Bibber will continue to handle the production and sale of Tri Cord, in addition to his new duties.

The Crane Company, 636 South Michigan Avenue, Chicago, manufacturer of power house specialties, has awarded contract for a new pipe and pipe-bending shop, with new warehouse adjoining, at Thirty-fourth Street and the Allegheny Valley Railroad, Pittsburgh. The new plant, it is stated, will cost about $800,000.

Robert D. Black, formerly assistant sales manager, Black & Decker Manufacturing Company, Baltimore, Md., has been made manager of the company's branch office at Philadelphia, 318 North Broad Street, succeeding W. C. Allen, who has been made a special factory representative with headquarters at the company's Cleveland office, 6225 Carnegie Avenue.

The Mica Insulator Company, held its annual sales convention at its works in Schenectady, New York, during the entire week of June 20, with representatives in attendance from New York, Cleveland, Cincinnati and Chicago. The convention was marked with great enthusiasm throughout and the consensus of opinion was that the future outlook for the mica insulation industry was very bright.

Topping Brothers, 122 Chambers Street, New York City, jobbers in railway track supplies and other heavy hardware, is having a new four-story and basement, reinforced-concrete warehouse and office erected on the 100-ft. x 125-ft. plot corner of Varick and Vandam Streets. The company plans to move into the new building, which will afford about 67,000 sq.ft. of floor space, before May 1 next.

New Advertising Literature

The Fitchburg (Mass.) Steam Engine Company has issued a forty-page catalog covering its different types of steam engines.

The Greenfield Tap & Die Corporation, Greenfield, Mass., is distributing catalog No. 46, covering its small tools and pipe tools.

The Combustion Engineering Corporation, 43 Broad Street, New York City, has put out a forty-one page pamphlet entitled "The Use of Powdered Fuel Under Steam Boilers."

The Turner Brass Works, Sycamore, Ill., is distributing Bulletin No. 5 covering its "New Line" torches, and also a four-page leaflet describing the "Turner" gasoline-kerosene torch.

The Hygrade Lamp Company, Salem, Mass., has issued a new standard price schedule book, in which it describes and illustrates its different types of incandescent lamps.

The American Chamber of Commerce in London, 8 Waterloo Place, has issued a year book for 1921 in which are listed the names and addresses and business classification of about 1,000 American and British firms including electrical manufacturers, interested in developing business between the two countries.

Signals — The Consolidated Car-Heating Company, Albany, N. Y., has issued bulletin No. 11-A, giving information in regard to its starting and stopping signals for single car and train operation, also information and catalog details of their signal light system, high-voltage buzzer system, high-voltage bells, push buttons, switches and electric couplers.

Welding Material and Equipment — The Wilson Welder & Metals Company, Brooklyn, N. Y., has issued Bulletins No. 100 and 101, together with a reprint from the *Iron Age*, describing the welding of a large tank car. Bulletin No. 100 describes the various grades of certified welding metal, and bulletin No. 101 describes their small lightweight portable welding instrument.

The Electric Storage Battery Company, Philadelphia, Pa., has just issued bulletins Nos. 180 to 185 inclusive. These contain information and descriptions of the latest development in the Exide storage battery construction and describe their adaptability for use with electric trucks, tractors, mine and industrial storage battery locomotives, as well as in railway signal service. Bulletin No. 181 gives the operating characteristics of lead acid storage battery and contains much information of value to those responsible for the maintenance of this type of equipment.

Cars and Car Equipment—The Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has issued an eighty-eight-page booklet describing the various types of electric cars now being used by numerous electric railway companies. This contains data as to the seating capacity, electricity, electrical and mechanical equipment, weights and dimensions of these cars, as well as operating characteristics of the various railways and halftones of the exteriors and floor plans for the various cars. This book should be of value to electric railway men contemplating the purchase of new cars.